MANUFACTURERS RECORD

ESTABLISHED 1882

A Publication for Executives

Volume 114 FEBRUARY, 1945 Number 2

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MANUFACTURERS RECORD PUBLISHING CO.
Publishers of MANUFACTURERS RECORD, CONSTRUCTION (daily), CONSTRUCTION (monthly) and BLUE BOOK OF SOUTHERN PROGRESS.

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Main Office: Candler Building, Baltimore 3, Md.
Phone: LExington 7065

BRANCH OFFICES:
New York (1)—393 Seventh Ave., Room 1615. 'Phone: Penna. 6-3515.
Chicago (4)—28 East Jackson Blvd.,Room 712. 'Phone: Harrison 5867.
Charlotte, N. C.—Sharon Hills Road. 'Phone 33 875.
Cleveland (15)—1836 Euclid Ave., Room 523. 'Phone Main 9357.

Subscription Rates: One Year $3.00. Two Years $5.00.
Single Copies 25c, back numbers over 3 months old 50c.

Entered as second class matter at the postoffice, Baltimore, Md., U.S.A., under act of March 3, 1879. Volume 114. Number 2. Monthly.

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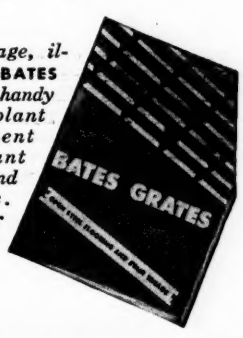

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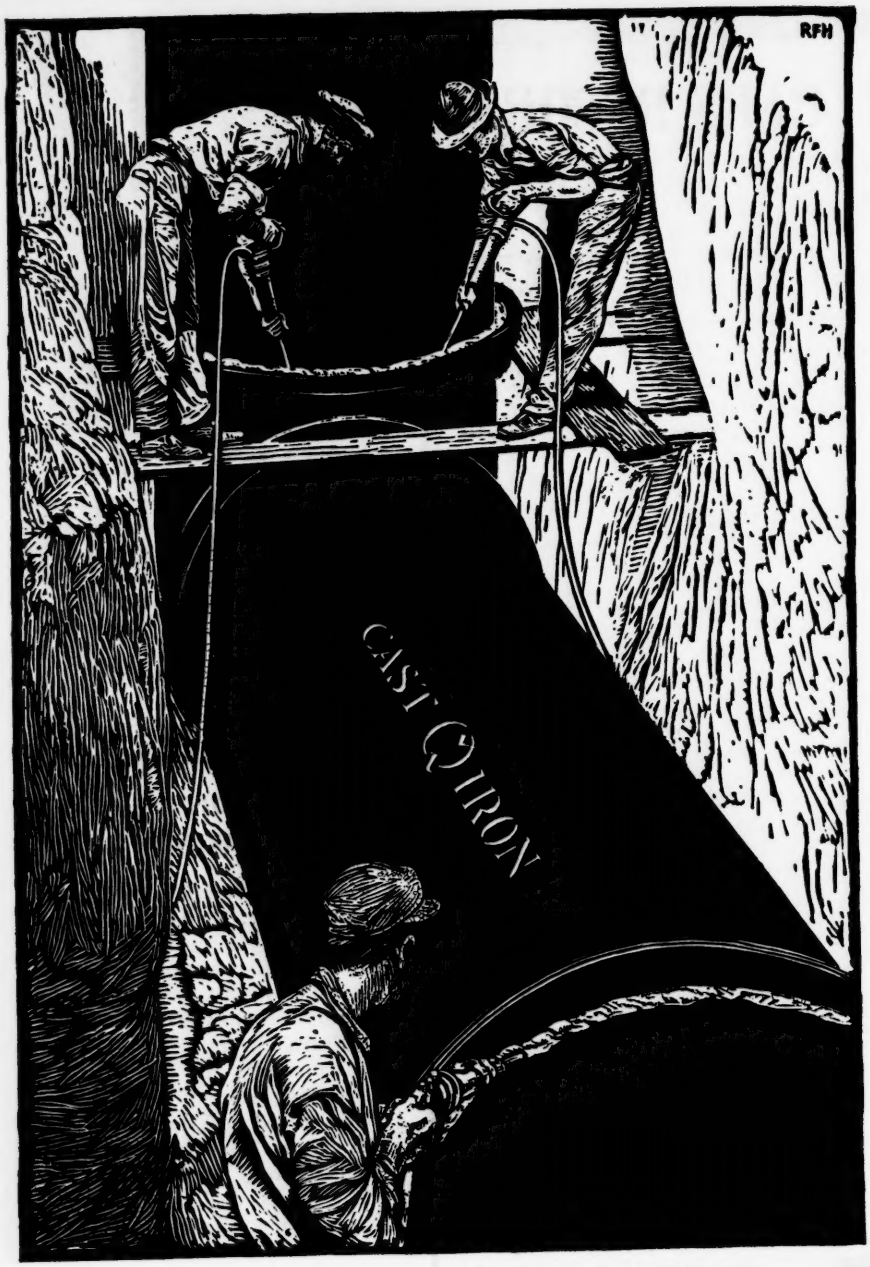

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"What Enriches the South Enriches the Nation"

REGULATION OR EXTERMINATION

There are two different kinds of monopolies. From the point of view of social welfare and progress in a land that cherishes the idea of freedom of opportunity one of these two is good and the other is bad.

The first of these types of monopoly, the good kind, is quite properly and appropriately called a "public utility." It is a business that can render the best and most economical service to its public—all of its public—by unification of its facilities and standardization of its prices. Since such a monopoly serves all of its public and since, if it was in the hands of selfish and greedy men, it could exploit the public, it should be subject to regulation and control by the power of the public represented by its agent the government. This need for regulation is nationally recognized and exercised. It should be exercised for the good of the entire community, state or nation involved. It should be used to insure the perpetuation of a property that is devoted to the service of all. It should not be used for the purpose of advancing the social, financial or religious interests of any race, class or creed.

The second kind of monopoly either erroneously or whimsically misnamed a "trust" is one which cannot improve its service for the public good by unified control but rather, is one in which such unified control may be inimical to the general welfare and progress. Destruction of such a monopoly is the sworn duty of the law enforcing department of the government.

The distinction between these two types of business monopoly will be entirely clear to any one when he thinks of the telephone company as an example of the good monopoly and of a possible "combine" of building contractors as an illustration of the bad monopoly.

A monopoly is not merely an entity that is organized and managed to restrain trade. It is any single unit that so dominates the supply of a necessity that in its field it can also constrain trade. It represents the power within itself to exert pressure for its own interests upon any external elements of the society in which it operates.

Money (in the loose sense of the word), individual shrewdness and selfishness, and opportunity have at times joined hands to create financial combinations that have been considered as opposed to the public good. They have been characterized as monopolies "in restraint of trade" and restraint of trade has been the basis upon which they have been dismantled and destroyed. "Restraint of trade" in the mind of Jim Jones and John Smith is synonomous with "against the public good." And the Jims and Johns are right. They are opposed to any power that dictates to them and is beyond their control as free citizens of a free nation.

In recent years we have seen grow up under the false label of liberalism a group of monopolies "in restraint of trade" that are ignored by the laws of the land in spite of the fact that they reduce the most valuable possession of man, his ownership of himself, to that of a human chattel and use that possession to threaten and coerce all of us by exercising monopolistic powers. They not only exercise this power over all of us without governmental restraint but they exercise it with government approval and encouragement. They exercise it over every individual who seeks to earn his living at an occupation the control of which has been usurped by a petty potentate with a palatable—though indigestible patter.

The organization of any labor union constitutes a direct attempt at monopolistic control that affects the economic lives of all of us. The closed shop represents the consummation of that objective. It is absolute monopoly, and can be called by no other name.

It is time that thoughtful men candidly admit that labor unions are monopolies and ask themselves whether they are monopolies of the good or bad class. Should they be regulated by our governmental representatives or should they be scotched by our department of justice?

RIGHTS AND DUTIES

In a civilized society every man has a RIGHT to protection of person and property. He enjoys this right only because he and all of his associates living together under the law have a DUTY to obey and uphold the law. In the American society citizens enjoy many RIGHTS but for each RIGHT they enjoy they have a corresponding DUTY to fulfill.

On October 28th, at Chicago, President Roosevelt reiterated his "economic bill of rights" that he originally presented in his annual state-of-the-union message to Congress last January. These RIGHTS are as follows:

"The right of a useful and remunerative job in the industries, or shops or farms or mines of the nation;

"The right to earn enough to provide adequate food and clothing and recreation;

"The right of every farmer to raise and sell his products at a return which will give him and his family a decent living;

"The right of every business man, large and small, to trade in an atmosphere of freedom from unfair competition and domination by monopolies at home and abroad;

"The right of every family to a decent home;

"The right to adequate medical care and the opportunity to achieve and enjoy good health;

"The right to adequate protection from the economic fears of old age, sickness, accident and unemployment;

"The right to a good education.

"All of these rights spell security. And after this war is won we must be prepared to move forward, in the implementation of these rights, to new goals of human happiness and well-being."

Mr. Roosevelt has assembled a truly Utopian cornucopia of RIGHTS. He should now direct the attention of his juristic and journalistic research assistants towards the task of formulating the Herculean list of DUTIES by which the RIGHTS can both be earned and deserved. With all due humility we seriously suggest that the first on the list of such duties should be the DUTY to WORK.

THE REAL PROBLEM

On the front cover of our January issue we printed the following paragraph "The national manpower problem is not generally understood. It is not to get more workers. It is to get more workers to work."

Since that sentence was written we have had abundant proof that it was far from incorrect. Letters and the daily press confirm it. Talks with business men, shop foremen and with workmen themselves lead us to believe that if absenteeism can be eliminated and deliberate slowdowns cured there will be no manpower problem in industries engaged in production for war and that the problem will be greatly minimized in all industries.

A striking illustration of this man-loafing problem or work-power shortage (call it whichever you will) is given in the state of Alabama.

On the same day that Director W. Emmett Brooks of the State Department of Labor reported that labor had a perfect record in Alabama for the month of December because there were no strikes or labor stoppages a big meeting was held in Birmingham to consider and deal with the problem of absenteeism. There city officials, county officials and war manpower authorities met to devise means to keep workers at work. A serious situation must exist to justify the program that was agreed upon which in brief is as follows:

Police and deputy sheriffs will make regular checks on poolrooms and other places and report to the WMC all persons who appear to be idling.

Absentee workers will be checked along with vagrants and reported.

A 72-hour limit on referral cards was set. Those failing to accept a job in that period must obtain another card.

Unemployed persons who subsist by taking a few odd jobs a month, such as cutting grass or firing furnaces, will be referred to WMC.

Appropriate action will be taken against employers who release workers and fail to report their release to WMC.

Persons refusing to take vital or essential war jobs will be referred to their draft boards with WMC acting as a clearing house.

Strange as it may seem this man-loafing problem seems to be more acute in war industries than in those whose main duty is supplying and servicing the home front. Why this should be so is apparently the sixty-four dollar question. Which is more important "more men for work or more work from men"? is only the two-dollar question.

Jobs or "Russian Dressing"

by

Harley L. Lutz
Professor of Public Finance
Princeton University

FREE private enterprise, operating under competitive conditions and, under the rules of the game as established by government and supervised by government as impartial referee, leads to inequality of incomes. This inequality derives from all of the variations of energy, capacity, imagination and daring which distinguish individuals, together with the differences in the risks involved in different economic fields. When we talk of encouraging and promoting private enterprise we can only mean that we intend to accept the inequality of incomes that will inevitably result if the system works well.

The ultimate goal of progressive taxation is the equalization of incomes. This puts it at exact cross purposes with the development of enterprise. Messrs. Ruml and Sonne admit the element of social purpose in their surtax scheme. This social purpose is the emphasis upon the equalization of wealth and incomes which has been so effectively promoted by the drastic progression of taxes on incomes and estates.

Any progressive tax scale is a longer or shorter step toward the final goal, according to the degree of progression involved. By whatever degree of equalization is achieved, the motives and incentives of enterprise are correspondingly impaired. Some one has said that the redistribution that will be achieved is a redistribution of poverty rather than of wealth.

The ideals for the postwar period have introduced another social purpose. It is quite different from the egalitarianism which had come to be accepted, before the present war, as the highest social purpose. This new aim or purpose of society is jobs, real jobs in which goods and services are to be produced that will be worth enough to make the laborer worthy of his hire. It is as clear as day that the new purpose of real jobs in private employment and the old purpose of equalizing incomes cannot both be realized.

It may be true that the doctrine of progression has been so fully accepted by the people as to eliminate the possibility of a change. It is said to be not politically feasible to abandon progression since the people want it. But it is time to go to the people and ask which they want more—jobs or taxation for a social purpose? The mass of the voters are sensible enough, know enough about the facts of getting a living, to understand that they can't have both. Perhaps they would get the point better if they were to be asked how much "Russian dressing" they wanted on the salad.

Some one has said that mankind is always standing at the cross roads of destiny, so it does not help much to say that here is another such cross road. But in any event, the parting of the ways is not always as clearly indicated as it is in the present issue. One road carries the markings of private enterprise, jobs, investment, risk-taking, and inequality of incomes, but with a rising level of incomes and well-being for all in the new prosperity. The other road carries the markings of equalization of wealth and incomes through taxation, mass unemployment, government support of the economy and eventual government ownership and control of the whole economy.

It is not too late to make the choice, although the time is getting short. If we do no more than to accept the kind of tax rate schedules which have been set out in the tax plans thus far proposed, we shall have made the choice, and in this writer's opinion, the wrong choice, by that acceptance.

By way of revealing an appreciation of the situation in which the tax planners found themselves, though not at all to express sympathy, it should be said that the rock on which they foundered is the kind of federal budget which they set up for the postwar period. From some experience with the problem of speculating about the post-war budgetary requirements, this writer realizes that when any one undertakes to find enough tax revenue to supply a postwar federal budget of $18-$20 billion, it is impossible to avoid putting on the screws. In the effort to be realistic about the budgets, the tax planners have been forced to become unrealistic as to the effects of their tax proposals upon the economic system which they want to foster.

But most of the postwar tax plans are, in fact, unrealistic about the budget. This judgment does not rest on a prediction of what the total will actually be, but on a conviction that this total can be materially less than the $18-$20 billion usually mentioned. Unless there be a resolute will to hold down the federal expenditures, the taxes required must rise to limits at which will be produced the repressive effects that everyone wants to avoid.

The arch villain in the postwar fiscal drama will be another "social-purpose" of an earlier era, namely, the purpose of having the federal government underwrite the good life for all. It will be a drama of real life, in which there will be no gallant, dashing hero to rescue the fair heroine (the private enterprise system) from being thrown over the cliff, sawed in two, or tied on the tracks before the approaching Midnight Express. So the heroine will probably be forced to succumb to the fate worse than death.

Southern Construction Starts Year Strong

$74,238,000 total passes December and January 1944

industrial work large factor in increase

by

Samuel A. Lauver

TOTAL of projects placed in the contract stage in the sixteen states of the South during the first month of 1945 is $74,238,000, or fifty per cent ahead of the figure recorded for December and sixteen per cent above the value of awards in January of 1944.

Except for the opening months of each of the three years of domestic defense and war construction boom, the current January's total is higher than it has been in any first month since 1936, when considerable activity in industrial and private building and highway construction pushed southern construction totals to what were then new heights after the distress of depression years.

The leading factor in the stronger January position was a substantial rise in industrial construction over both the December and January 1944 totals for this type of work. The current industrial total was $32,342,000; that for December, $15,461,000, and for January of last year, $12,039,000.

The industrial figure was supported chiefly by big projects in Alabama and Texas. Largest component in the Alabama figure was a multi-million dollar tire and tube plant. Lone Star State activity was more diversified, one of the more important projects being a carbon plant.

Other factors in the January increase were the public building aggregate of $19,848,000; the engineering figure of $12,018,000; the highway total of $6,427,000, and the private building figure of $3,603,000. All, excluding the highway sum, were higher than in December. The current January's highway contract total, however, is seventy-one per cent above its counterpart at the beginning of 1944.

Predictions of construction, even in the immediate future, are difficult to make, but one reasonable certainty, if incoming reports are to be believed, is a rise in food processing and freezing projects. One of the latter proposed for the middle South will cost $1,000,000.

Previously announced expansion of sulphuric acid facilities materialized in at least one War Production Board approval for a southern project. Chemicals from waste oil are to become a reality upon construction of a $20,000,000 plant for that purpose in the Southwest.

The remedy for the reported tire shortages of the armed forces is seen in current steps being taken to provide additional facilities. Besides the $17,000,000 Alabama plant, a $6,000,000 factory to make synthetic rubber tires is proposed in Texas. Smaller construction projects are active in the same field in Mississippi and Virginia.

Railroad construction is on the upswing. Norfolk and Western Railway is making extensive improvements at its Williamson, W. Va., engine terminal to speed war traffic. Projects under a $3,735,000 program on the Ashland division of the Chesapeake and Ohio Railway are in varying stages of completion.

A $2,000,000 extension of the Louisville and Nashville Railroad is opening up new coal territory. The 1945 program of the Missouri Pacific, which operates through extensive southern areas, will involve $9,107,000. The Southern and the St. Louis-Southwestern are other prominent railroad names included in the construction news.

Additional navy construction is seen in a high ranking officer's reference to the $7,250,000 construction program, "the

SOUTH'S CONSTRUCTION BY STATES

	January, 1945		
	Contracts Awarded	Contracts to be Awarded	Contracts Awarded January, 1944
Alabama	$24,681,000	$1,539,000	$3,000,000
Arkansas	172,000	1,270,000	95,000
Dist. of Col.	3,039,000	287,000	1,249,000
Florida	7,010,000	8,865,000	10,825,000
Georgia	3,284,000	1,750,000	3,367,000
Kentucky	136,000	2,395,000	239,000
Louisiana	1,303,000	6,592,000	4,334,000
Maryland	5,676,000	2,120,000	5,745,000
Mississippi	518,000	2,162,000	2,048,000
Missouri	335,000	5,176,000	1,692,000
N. Carolina	2,958,000	3,195,000	2,491,000
Oklahoma	657,000	1,070,000	1,740,000
S. Carolina	2,215,000	4,863,000	3,616,000
Tennessee	574,000	16,801,000	1,993,000
Texas	18,472,000	73,968,000	15,217,000
Virginia	3,228,000	19,093,000	4,967,000
W. Virginia	30,000	285,000	1,278,000
TOTAL	$74,238,000	$151,431,000	$63,896,000

SOUTH'S CONSTRUCTION BY TYPES

	January, 1945		
	Contracts Awarded	Contracts to be Awarded	Contracts Awarded January, 1944
PRIVATE BUILDING			
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$299,000	$3,163,000	$229,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	814,000	1,385,000	178,000
Residential (Apartments, Hotels, Dwellings)	2,293,000	1,885,000	9,139,000
Office	197,000	645,000	.....
	$3,603,000	$7,078,000	$9,546,000
INDUSTRIAL	$32,342,000	$50,914,000	$12,039,000
PUBLIC BUILDING			
City, County, State, Federal	$15,579,000	$34,500,000	$15,132,000
Housing	3,018,000	1,273,000	5,177,000
Schools	1,251,000	12,964,000	939,000
	$19,848,000	$48,737,000	$21,248,000
ENGINEERING			
Dams, Drainage, Earthwork, Airports	$7,886,000	$13,552,000	$15,593,000
Federal, County, Municipal Electric	.....	3,375,000	34,000
Sewers and Waterworks	4,132,000	4,155,000	1,681,000
	$12,018,000	$21,082,000	$17,308,000
ROADS, STREETS AND BRIDGES	$6,427,000	$23,620,000	$3,755,000
TOTAL	$74,238,000	$151,431,000	$63,896,000

magnitude of the job done thus far does not, by any means, mean that the task is finished." How much of the work will be in this country was not indicated.

Army construction this year will include from $275,000,000 to $300,000,000 for alleviating the munitions shortage. Funds approximating $181,722,000 are available for air and ground force building; industrial and storage and shipping facilities and for miscellaneous projects.

One phase of 1945 army construction will be enlarging and strengthening airfields for big bomber operation. Four fields in Texas and one each in Alabama, Florida, Georgia, Louisiana and Mississippi are part of the program. Among the ordnance projects on which more than a million dollars is being spent are three in Texas, two each in Missouri, Virginia and West Virginia and one each in Louisiana, Maryland, Mississippi and Tennessee.

Total construction for this country this year has been variously estimated between three and four billion dollars, with public and private work divided slightly in favor of the former if the European phase of the war continues through the year and in favor of private building if the Nazis collapse by spring.

Military construction is expected to continue higher in the one case, lower in the other. Industrial construction, withal, is expected to rise if the European war is concluded. This may not be the true situation as the changing industrial needs of the armed forces have reversed expectations in the past.

INDUSTRIAL

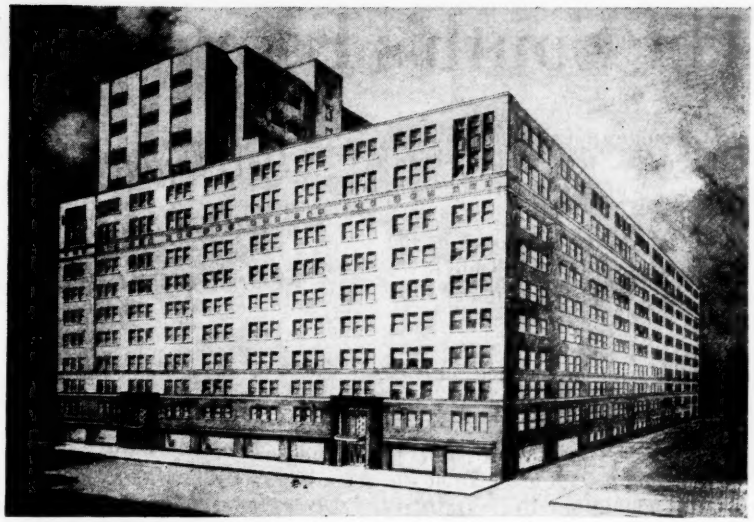
(Including Private Utilities)

	January, 1945 Contracts Awarded	January, 1945 Contracts to be Awarded	Contracts Awarded January 1944
Alabama	$18,130,000	$ 235,000	$ .....
Arkansas	.....	1,035,000	.....
Dist. of Col.	.....	.....	300,000
Florida	578,000	150,000	1,905,000
Georgia	100,000	450,000	625,000
Kentucky	.....	.....	175,000
Louisiana	113,000	1,450,000	1,067,000
Maryland	419,000	.....	1,053,000
Mississippi	118,000	213,000	.....
Missouri	120,000	1,050,000	1,160,000
N. Carolina	362,000	70,000	369,000
Oklahoma	.....	.....	.....
S. Carolina	147,000	328,000	2,015,000
Tennessee	250,000	15,250,000	510,000
Texas	11,440,000	29,970,000	2,260,000
Virginia	565,000	613,000	300,000
W. Virginia	.....	100,000	300,000
TOTAL	$32,342,000	$50,914,000	$12,039,000

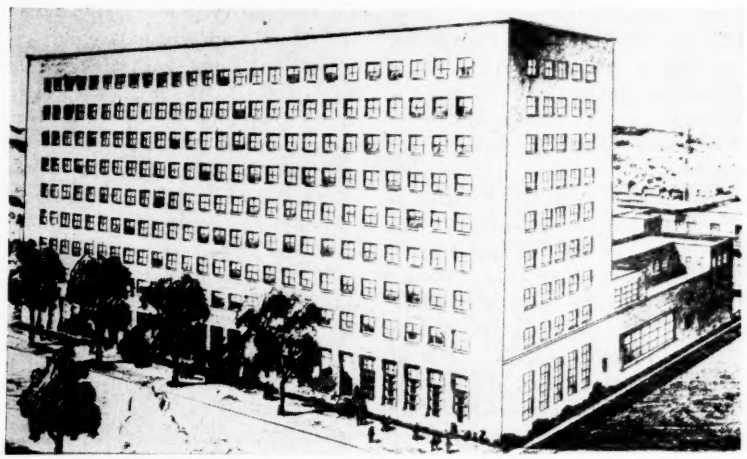
PUBLIC BUILDING

(City, County, Federal; Housing; Schools)

	January, 1945 Contracts Awarded	January, 1945 Contracts to be Awarded	Contracts Awarded January 1944
Alabama	$ 4,050,000	$ 852,000	$ 1,322,000
Arkansas	50,000	175,000	.....
Dist. of Col.	2,714,000	257,000	930,000
Florida	718,000	2,284,000	2,318,000
Georgia	1,879,000	650,000	459,000
Kentucky	56,000	10,000	64,000
Louisiana	464,000	2,225,000	1,189,000
Maryland	3,994,000	1,645,000	3,808,000
Mississippi	280,000	1,038,000	1,817,000
Missouri	70,000	2,031,000	322,000
N. Carolina	1,297,000	2,600,000	1,070,000
Oklahoma	343,000	765,000	103,000
S. Carolina	665,000	3,715,000	748,000
Tennessee	249,000	465,000	271,000
Texas	935,000	12,612,000	2,895,000
Virginia	2,084,000	17,313,000	3,798,000
W. Virginia	.....	100,000	44,000
TOTAL	$19,848,000	$48,737,000	$21,248,000

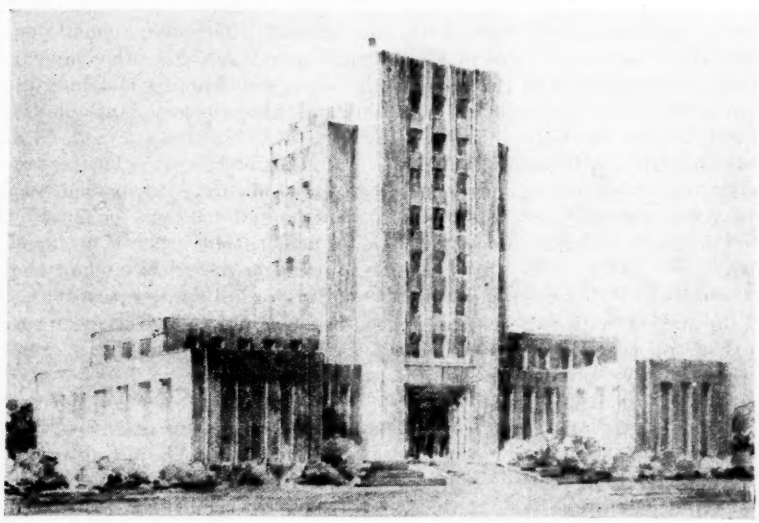


Furniture mart at High Point, N. C., shown as it will appear after enlargement to 475,000 square feet. Voorhees and Everhart are architects.



Above—$3,000,000 office and recreation building proposed at Bartlesville, Okla., by Phillips Petroleum Company.

Below—$1,500,000 city hall planned by Birmingham, Ala. The perspective was made by George P. Turner, Architect.



The South's Economic Opportunity

Development by Enterprise or Government

by

Roscoe Arant

Regional Business Consultant
U. S. Department of Commerce
Atlanta, Georgia

ANY sound appraisal of the opportunities for business expansion, or of the future of competitive enterprise, must focus a large part of its attention on the eleven states south of the Ohio River and west through Louisiana and Arkansas.

What happens in the post-war South will be of importance not only to the region itself, but because of its economic potentialities, its present status of development, and the fact that more than one-fifth of the nation's population live within its borders, will also have an important bearing on general business opportunity of the nation, and the future of enterprise as a system.

The significance of this can be understood only after a brief resume of some of the basic advantages of the region, set in apposition to the present levels of its economic development.

These states comprise an area of over half a million square miles, and more than 28 million population. Practically all of it has at least a 6-month growing season without killing frosts, and about one-half of it has a 7-month season. It is all within the 40-inch, and at least one-third of it is within the 45-inch rainfall belt. These two factors, ample rainfall and long growing season, account for the fact that it is the largest single forest area in the United States.

The nineteen states of the nation, 47 percent or more of whose area is in commercial forests, include all of these states except Kentucky. Although much of these areas have been cut over, and to a large extent wasted, not only do tremendous quantities still remain, but the long growing seasons and heavy precipitation provide for rapid regrowth under sound forest practices.

There is probably no other region of the nation with as broad a variety of soil types in such extensive acreages as are found in the South. This gives unique potentialities for crop varieties, both standard and specialty, which taken in combination with the long growing seasons, and ample rainfall, provide the basis for a well diversified agriculture at high levels of annual yield. Although uneconomical practices have permitted the washing away of tremendous quantities of its best top soils, there is still enough left for a strong agricultural base, and much of what has been lost can be restored under sound practices of agriculture and soil restoration.

The dense network of rivers and small streams provide facilities for drainage, irrigation, hydro-electric power, and water supplies for cities and industrial plants in practically every part of the region.

Although the South apparently does not offer much in the way of the more spectacular types of metals and minerals, it has adequate supplies of iron and bauxite ores, coal, phosphates—and the less expensive materials such as clays, sand and gravel, limestone, cement, petroleum and gas and others essential to a sound and consistent industrial growth are available in every state.

In addition to these major resources of nature, interspersed with others not necessary to mention here, modern networks of artificial resources of the service character essential for industrial operations—transportation and electric power, for examples—are available in every part of the region.

Such a combination of natural and artificial resources, when taken in relation to the 28 million consumers within its own borders, and its easy accessibility to the other more highly developed markets of the nation, provide a base for one of the most widely diversified agricultural and industrial economies, at high levels, in the world.

When considered in the proportions of more than half a million square miles, the possibilities for balance and diversification, both in character and geography, the interflow of trade within the region alone, should provide a continuity of operations, sustained yields on investment, and regularity of employment not possible in the highly specialized regions. If there is any region which lends itself, by nature, to economic development and sound capital invesment, surely the South must be one of them.

At present, because of the general low levels of its economy, in the face of such ample resources, the South poses a serious dilemma before business. On the one hand, it stands as a new and undeveloped frontier for markets and general business expansion. On the other, it stands as a thorn in the flesh of free economy.

Notwithstanding its economic potentials, the cash farm income, and the general per capita income in the South are the lowest in the Nation. The ratio of farm tenancy and soil erosion is the highest. These factors account, in large part, for the loss of the top soils in the South at the rate of more than $300,000,000 per year—a drain from its capital base which no region can continue to suffer without permanent impairment of its economic structure.

The South stands almost uniformly at the bottom of the list of states in such facilities as automobiles, farm equipment, mechanical refrigeration, radios and other electrical equipment, running water, educational facilities, and many other necessities and conveniencies of common living, which represent either illimitable markets for business, if adequate income-producing employment were developed—or a compelling demand for government intervention if business, for whatever reason, fails in the alternative.

The historical reasons for these conditions, nor in whom the fault

lies, need not be considered here. The fact that they do exist is sufficient. The general trend of events, both in the South and in the nation during the past two decades, which will undoubtedly be accentuated by the problems of demobilization, and the inevitable demands on the post-war economy as a whole, make it clear that the dilemma will be resolved. The important question to business is how, and by whom? And because of the magnitude of the problem, the answer will be national in consequence. It could mean the difference between a complete reinvigoration for competitive enterprise, and added impetus to the tide of government economy.

The full magnitude of this problem, nor its broad implications, do not yet appear to be adequately appreciated by business. Many service industries, particularly the principal railroads, power utilities, some of the more progressive banks, many chambers of commerce and similar agencies in the South have, for many years, done commendable jobs of economic promotion, largely in the interest of their individual trade areas. To these, more recently have been added a number of state agencies, such as planning and industrial development boards.

Largely as a result of their efforts, accentuated by the general trends for industrial decentralization, the natural attraction of the South for development, and other factors, the region has shown, as registered through comparisons in the Census of Manufactures for 1919 and 1939, a rate of industrial expansion much in excess of the average for the rest of the nation. But the difference between starting points was so great, that while large percentage differences may mean much in terms of basic trends, they become less significant in closing the gap between actual magnitudes—and it is going to be difference between actual magnitudes of demand on the economy of the region, and the size of its response, which will be required to solve the problem of the southern economy in the next few years.

The question will not be whether the South has shown a certain percentage of improvement over its economic status of five, ten, or fifteen years before. It will be whether it will have met the requirements of a strong national economy, and the demands of its people so that they will not respond to proposals inimical to the welfare of business.

Business men who believe that the integrity and survival of enterprise will depend upon whether the millions of demobilized service men and war workers can find jobs in private employment, must know that employers must have markets for their products, and that therefore, the development of the purchasing power of our 28 million customers in the South will hold an important part of the answer to the continuance of the enterprise system.

Although many railroads, electric

Roscoe Arant

power, and other service industries are doing excellent jobs of development, it is doubtful if, at the present rate of accomplishment, the net results are of sufficient magnitude in kind, or in geographic scope, to stem the tide of government in the South. For very understandable reasons, their emphasis is largely specialized to industrial promotion within their own immediate trade areas. The miles of space between such areas of development are too broad—and too frequently they do not include such basic implied problems as sound and profitable agriculture, resource conservation, health, education, and many, many other related matters, the neglect of which tends, in an important way, to reduce the force of many of the region's best efforts. Economic development will have to extend to every part of the region, and to all of its implied phases—both in the interest of business and the welfare of its people, and in the interest of a better balanced economy for the nation.

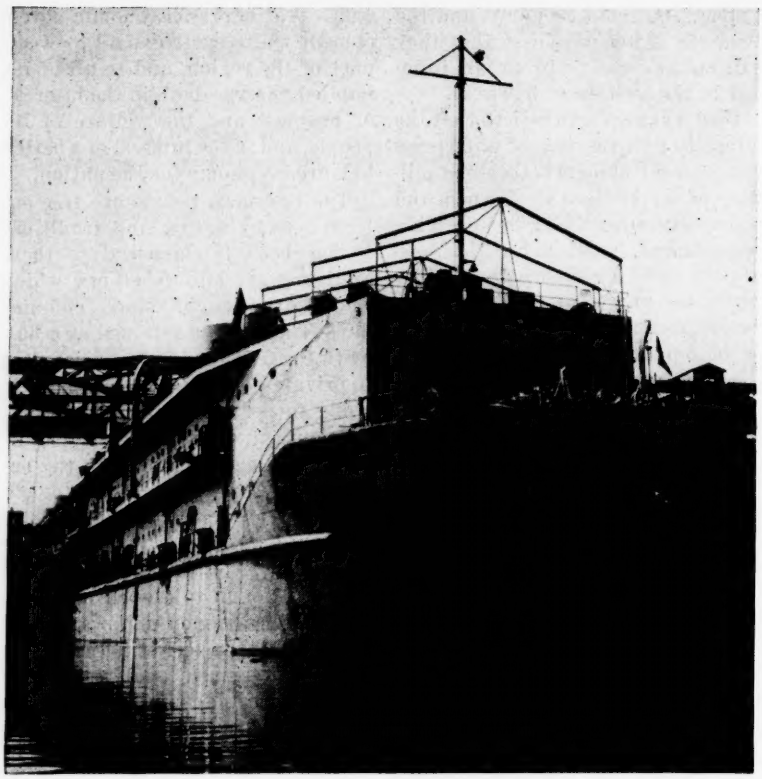
The Southern people are free enterprisers by nature and tradition. It has been fundamental to them even in wars and rebellions which they have fought since colonial days. They can be retained as a bulwark for freedom in enterprise. But if private competitive enterprise is going to persist as the economy of the South, and retain this important region as a stronghold for the enterprise system, it will have to consolidate its strength through greatly increased quantities of production for higher levels of living, at a rate rapidly enough to absorb its demobilized service men and war workers before they feel it necessary to call on government, and in such way that its people may "know" that their security and welfare for the future rests in a free economy.

Although the South has, for many years, shown consistent increases in the rate of its industrial expansion, the rate is not now large enough to anything like meet the opportunities and demands which will be made on the region in the early post-war years. This process must be crystallized into a movement with a scope and impetus which has not thus far been attained.

Business leadership which can abstract itself far enough from the trees to see the forests, and who can project themselves across state and sectional lines, and beyond the boundaries of their trade areas will have to find ways and means for activating all lines of business and industry, and all sizes of firms, both large and small, to multiplied increases in private production and employment. Charts must be drawn, and effective plans and programs undertaken to greatly expand the scope and efficiencies of business and other agencies in the South which can make contributions to these ends.

It will be necessary for business leadership, through effective organization, to see that ways and means are provided through which the best minds of the region can be brought

(Continued on page 78)



Left — An APL, or auxiliary personnel lighter, otherwise known as a barracks ship. The vessel is about 260 feet long, has a beam of 48 feet and a displacement of about 2,600 tons.

"Noah's Arks" Built for Navy by Nashville Bridge Firm

NOAH'S Arks, they call them — those floating hotels which the Navy has officially designated APL's, or auxiliary personnel lighters.

They are, in the words of Navy Department officials, "glorified barges" and their purpose is to provide barracks in far off or inaccessible places where no such accommodations exist.

They originate not on the seacoast but on the inland waterways, where many of the auxiliary vessels needed to carry the war to Axis countries are being built. Their birthplace is the Nashville Bridge Company, one of those Tennessee concerns that have dropped many of their peacetime pursuits to produce the needs of war.

The APL is a non-propelled vessel and is used principally as an auxiliary to repair ships and tenders for housing, feeding and otherwise satisfying the needs of about one thousand navy men, in addition to the number required for its own crew.

Each vessel has a complete bakery and galleys for the preparation of food. Those that work with submarine tenders have more elaborate recreational, rest and sick bay facilities than the others.

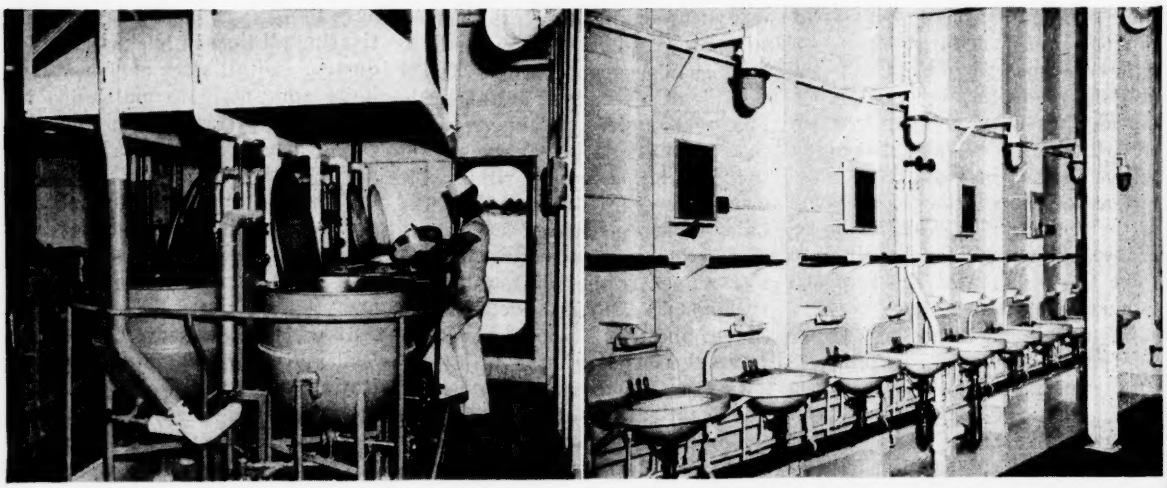
Bunks are four-tiered. Officers are quartered in cabins. The sick bay rivals a well-equipped small hospital. Dental care is provided by use of the most modern equipment, including X-rays.

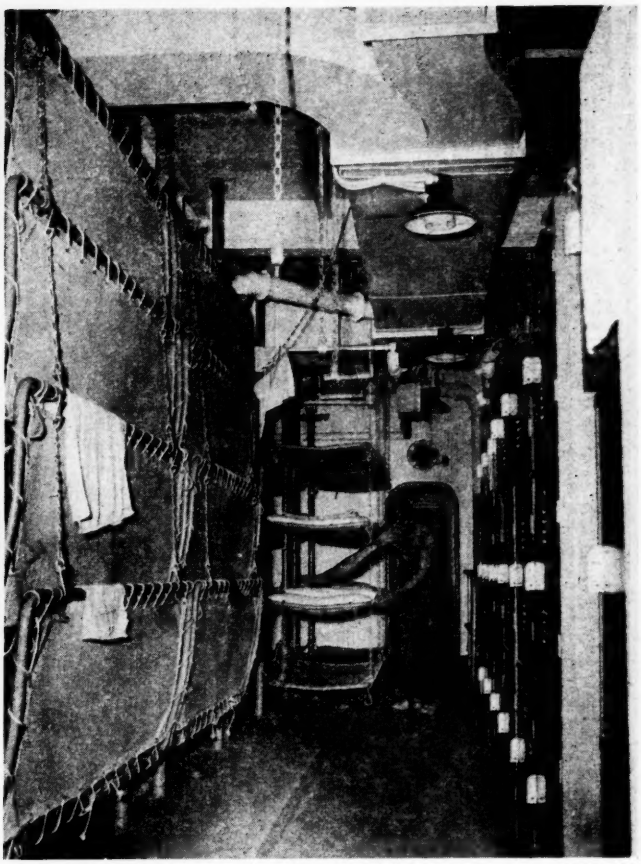
APL cake-mixers consume two barrels of flour at a time. Refrigeration machinery preserves the food for "guests" and crew. There are huge washers in the ship's laundry, as well as steam pressers.

One of the "whys" that will raise the question of the need of the navy for floating barracks can immediately be answered by the fact that

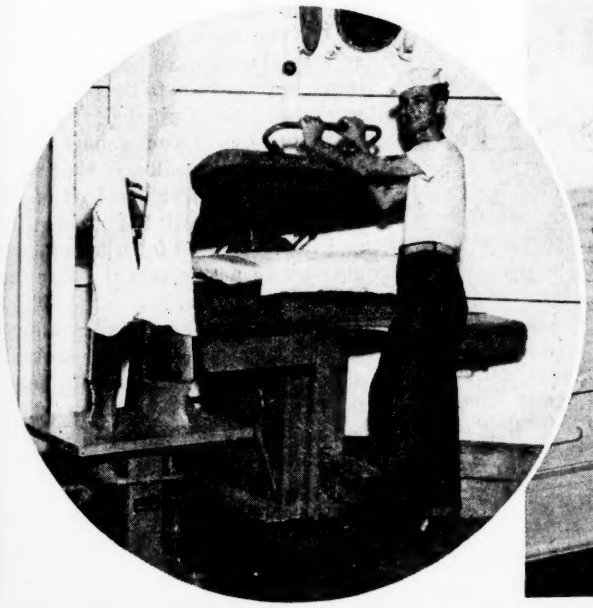
(Continued on page 76)

Huge boilers (left) are installed in the galley to provide food for more than 700 repair men, who are numbered among the 1,000 "guests" aboard a typical APL. The view at the right is of part of one of the lavatories.





APLs, or barracks ships, sometimes referred to as "Noah's Arks." Sheltering about 1,000 men, in addition to the crew, the vessels are equipped with four-tiered bunks for enlisted men, shown at right above, and comfortable cabins for officers, pictured at right below. Barracks ships that work with submarine tenders have more elaborate recreation, rest and sick bay facilities than do other ships of the type. A hospital room aboard an APL is shown above. Huge washing machines and pressing equipment are also installed. One of the latter is illustrated below. The ships are also equipped with 20-millimeter guns and have complete bakeries, galleys, refrigerating and water treating plants.



Good forest practices are shown in the two pictures of a privately owned and a lumber company's land in Arkansas. The 37-year-old stand of shortleaf and loblolly pines in the view above has been thinned out to give larger, better tree space and produce valuable sawlogs, poles and piling. The eight cords of pulpwood obtained in the operations more than paid for the work. Sixteen cords of pulpwood were cut and 20.6 cords per acre remained for next cut on the land pictured in the large view above at the left. Opening the stand will encourage seedlings for still a third crop.

Circle—Lack of information on good forestry practices usually results in loss of money. Cost of owning the land will continue but the few trees left will not reseed the area for many years and until a new crop grows the farmer will have all out-go and no income.

GOOD FORESTRY

by

Richard E. McArdle

Assistant Chief,
Forest Service, State and Private Forestry

NOWHERE in the United States does the problem of how to make our country's forests contribute their full share to the security and well being of the Nation — to the permanency of jobs, industries, families and communities — present itself in a more surprising and significant set of facts than in the "Piney Woods" of the South.

Here in the States that stretch from the Potomac to the Florida Everglades and the Texas and Oklahoma plains is an empire of 180,000,000 acres of pine and hardwood forests occupying about 60 per cent of that section of the country. Its warm climate and soil conditions grow trees generously and remarkably fast, as is proved by the fact that in the main the southern forests have been cut over two or three times, even though sadly burned and abused.

How productive these forests are, even though as a whole they have never been managed and protected as they should have been, and how important they are to the people and workers of the United States, may be judged by a recent report of the War Production Board that two-fifths of the lumber, one-half of the pulpwood and all the turpentine and rosin required for war purposes have been coming from the pine forests of the South.

Yet today these same Southern forests have within their bounds only one-half the amount of timber that they could and should be growing and producing. They are yielding about one-third as much timber as they might under proper management. They provide yearly employment for about 500,000 woods and mill workers, but if rightly handled

(Continued on page 68)

Louisiana Fosters Small Business

A BETTER break for the "little business man" in Louisiana is seen in a recent executive order of Governor Jimmie H. Davis creating the Louisiana Small Business Advisory Board. Purpose of the board is to make readily available to officials of the state's smaller enterprises expert information and services on industrial relations, financing, production methods, marketing distribution, credit, and similar subjects, that are vital to successful operation, but which the average small business can ill afford.

Federal and state agencies, organized labor, private business, and educational institutions of Louisiana pooled their facilities in setting up the board, whose membership includes R. D. Reeves, state director, War Manpower Commission, chairman; R. E. Judd, district manager, Louisiana Smaller War Plants Corporation; Caye A. Nelson, executive director, Louisiana Economic Development Committee of the Department of Commerce and Industry; Dean L. J. Buchan, College of Commerce, Tulane University; Dean James B. Trant, College of Commerce, Louisiana State University; Sam B. Dunbar, manager, Louisiana Manufacturers' Association; H. T. Koch, American Association of Small Business; W. R. Mayo, president, Central Labor Union, A. F. of L.; R. W. Starnes, C. I. O. acting regional director.

Governor Davis is enthusiastic over the possibilities of the board's services, and believes that it may do much to counteract the difficulties that have dogged many smaller firms since the war's beginning.

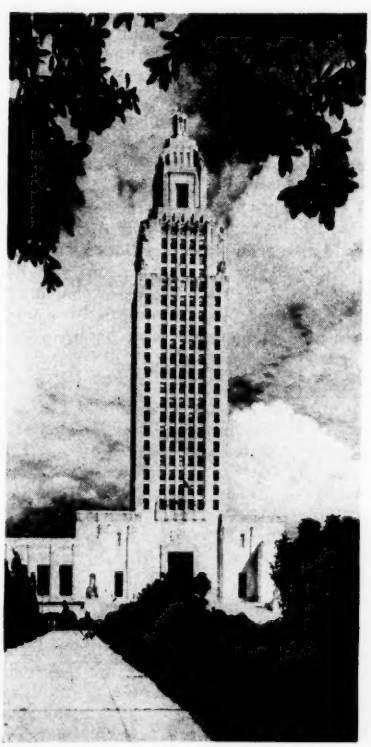
"These are extremely critical times for our small businesses," the Governor declares. "Many of them are handicapped with problems of a technical nature that could be worked out with the right kind of advice and guidance, but the majority of them cannot afford the services of technical specialists. As a result, some have even been forced to close. With its combined authorities and facilities, our Small Business Advisory Board will be able to give such firms, without charge, counsel and active assistance toward resolving their troubles."

Under the plan of the board, as far as known the first of its kind organized in the South, the War Manpower Commission will cooperate by furnishing small businesses the services of its active field staff, in addition to providing recruitment service, and rendering advice on industrial relations techniques. The Smaller War Plants Corporation can assist by lending its facilities for operation and expansion, by leasing machinery and equipment, and by helping the small business to procure critical materials. The board's labor members can provide advice on worker-manager relations, while the manufacturers' association representative can give practical assistance in the solution of factory operation problems. Louisiana State University and Tulane University, through their Colleges of Commerce, will assist in both advisory and active capacities, contributing the knowledge and experience of their personnel, as well as conducting any surveys, studies, or other necessary research activities.

by

George W. Wallace

Executive Director
Louisiana Department of Commerce and Industry



"The Louisiana Economic Development Committee," the Governor points out, "is already working through the State Department of Commerce and Industry for the development of industrial opportunities and for postwar expansion, and will to a great extent be able to coordinate its program with that of the Small Business Advisory Board. Only recently this department completed a state-wide study of Louisiana's war plants, its research indicating that many of our factories in this class will be able to convert to peace-time operations eventually, rather than terminate their operations.

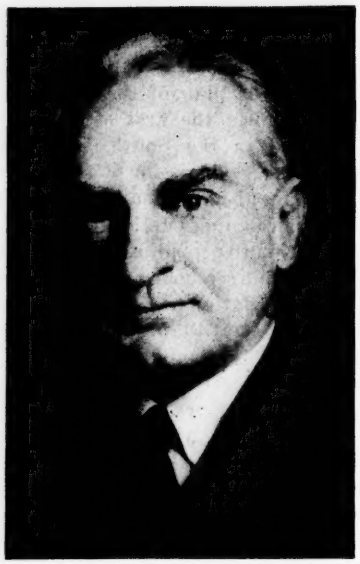
"But the industries found most likely to continue in the postwar period are the larger ones, such as those producing synthetic rubber and ammonia. Rubber plants will probably be needed for an indefinite period following the war, and they are seen as the nucleus of an important and perhaps permanent Louisiana industry. Ammonia plants may also be permanent in view of their adaptability to the production of chemicals, fertilizers, and plastics. But most of these are 'major' plants employing 100 or more workers, and are in the relatively high income bracket.

"It is true that scores of our miscellaneous small plants and shops are now working on war contracts, and many of these, too, will be able to resume their pre-war functions, while some may even find it necessary to expand in order to handle accumulated non-priority orders. But the fact remains that there has been a fairly high mortality of our small businesses of the type not suited to war work. It is these we want to help, and quickly.

"We want to make it clear," the Governor emphasizes, "that in set-

(*Continued on page* 68)

THE GOOSE THAT LAYS THE GOLDEN EGGS



by

Ernest E. Norris
President
Southern Railway System

ONCE upon a time (all fables begin that way, you know)—once upon a time, a Big Family had a Goose. It was an old Goose. But it was a very unusual and a very valuable old Goose. For, you see, this particular Goose laid eggs of pure gold. It laid them every day, rain or shine, summer and winter; Golden Eggs that kept this Big Family fed and clothed and supplied with all the good things of life. The truth is, this family simply couldn't have gotten along without its proliferous Goose.

But as the years passed, the members of this Big Family began to take the old Goose for granted. In their preoccupation with many other things, they sometimes forgot to feed it. Often they left it out at night so it had to do the best it could to outwit the wolves that seemed always to be hungry for goose-meat. At other times, they would simply neglect to turn it out in the barnyard, so that it could waddle down to the pond for a drink. Yet all the while, the good old Goose kept on laying one Golden Egg after another.

Now the Big Family that had this amazing Goose was no different from most big families. It had good sons and bad sons; generous sons and greedy sons. It even had a politically-minded, black sheep son, who was always plotting to become head of the family. And it was this son who shocked the family one night by proposing that they kill the old Goose, get all its Golden Eggs at once, and live in luxury ever after.

Of course, the proposal created a furore. Most of the family had come to love the old Goose, and to depend upon it. Yet he got some support for his villainous plan. The lazy son saw a chance to get out of work and he said, "Fine." The greedy son naturally went along. The "tight" son agreed too, sensing a chance to save his share of the cost of feed. But the sensible members of the family finally prevailed—and the old Goose went right on laying its Golden Eggs every day as if nothing had happened.

The story might have ended there—except for the persistence of the politically-minded son. He became more determined than ever to get all the Golden Eggs at once. So, with the connivance of the lazy, the greedy and the penny-pinching brothers, he set out to kill the old Goose by degrees. Slyly they gave almost all its feed to the other geese. Then they fenced it in one small corner of the barnyard. And finally they tied it up so completely that it couldn't even move about to catch a fly.

Of course, the other members of the Big Family soon caught on to the scheme. Some of them protested. The thoughtful son pointed out that the plan was short-sighted and quite unfair to the old Goose that had given them so much through the years. But unfortunately most of the members of the Big Family were not greatly concerned. Not that they approved of what was being done, but they just couldn't bring themselves to put a stop to it because of a faint suspicion that, after all, the conspirators might be right; they might get all the Golden Eggs at once if the old Goose did die. Then, too, many of them were engrossed in the younger geese in the barnyard, hopeful that they would also grow up to lay Golden Eggs.

Still, in spite of short rations and its penned-up life, the old Goose continued to do its best. But eventually it would have died—had it not been for an unexpected turn of events.

Bad times came. They brought serious problems for the Big Family. Many of the sons found themselves out of jobs. It was then that they all awakened to the fact that they were taking an awful risk by letting the greedy and nearsighted brothers starve and cripple the prolific old Goose. What if it died and gave up no Golden Eggs?

So again the thoughtful and sensible sons prevailed. The old Goose was released from its corner pen. Its hobbles were removed. It began to get its share of the feed. And it was not long before it began laying Golden Eggs bigger than any it had ever laid before—saving the day for the whole family which, by the way, lived happily ever after.

That's my fable—and I'm going to stick to it! For that's the story of the railroads, as I see it, retrospect and in prospect. But just to make sure that we all understand this fable in terms of today, let's identify some of the principals I have mentioned:

The Goose that lays the Golden Eggs is the railroad industry.

The Big Family that had the productive old Goose is composed of the people of these United States.

The sons I have mentioned you know well—just as you know better than I do which of the sons stands as a symbol for your attitude toward the old Goose.

The barnyard that was denied to our prolific Goose for awhile is the general field of common-carrier transportation in this country.

The feed which sustains the Goose that lays the Golden Eggs is the amount needed to pay all their expenses, taxes, and a fair return on their investment.

And the Golden Eggs? Here perhaps I have a surprise for you. For the Golden Eggs of this fable are labeled—JOBS; plain, every-day, old-fashioned lifetime JOBS; jobs with security; jobs with opportunities for advancement; real American jobs for real American workers.

All informed people today agree that the future of private enterprise in this country depends largely upon the capacity of American industry to provide a job for every able-bodied worker who is willing to give a fair day's work for a fair day's pay. Those who have carefully studied our economic, political and social trends tell us that, when this war is over, what we proudly call the American Way of Life will be on trial. They say that private industry will then be put to its greatest test. They say that its success or failure will be determined by the number of jobs it can provide for returning members of the armed forces and for those who have done their bit on the home front by working in our war plants.

These are not bed-time stories. These are not the warnings of impractical theorists nor the croakings of professional "viewers with alarm." They are the considered judgments of hard-headed businessmen. They constitute a breath-taking challenge to every businessman in the land. Together we either provide enough jobs to go around—or we may witness the collapse of the enterprise system that has made this nation the greatest, the strongest, the best country in all the world!

If this is true—shouldn't every thinking person in the country today be considering the job-producing capacity of this nation?

If this is true, shouldn't all of us be concerned about the kind of jobs that will be available after V-Day; about real, honest-to-God American jobs in American private

industry; jobs that have permanence and a future; the only kind of jobs that are fit for the kind of Americans that are fighting for us all over the world today?

If this great test of private enterprise is just around the corner, is it not reasonable to assume that every sensible businessman in the country will energetically support and defend those industries which can create and provide great numbers of real jobs—not synthetic jobs—after Peace returns?

Then in plain, garden-variety self-interest, let's look again at the simple old Goose that lays the Golden Eggs: at the nation's No. 1 example of private enterprise at its best; at the first line of defense for all private enterprise in this country; at our railroads.

Direct employment by the railroads is closely related to the tonnage of freight and the number of passengers to be moved from one place to another. In few years has railroad employment fallen below the million mark. The average number of railroad workers for the past twenty years has been around 1,200,000. Even in the depths of the depression, when all business was marking time, the total number of railroad employees was only slightly less than a million. And if, as the experts predict, the volume of post-war railroad business will eventually level off at about the 1941 volume, the railroad industry should be able to provide jobs for at least 1,200,000 workers. That is a sizable chunk of real American jobs, encompassing every known profession and skill and trade—administrators, machinists, doctors, boilermakers, lawyers, firemen, chemists, electricians, civil and mechanical engineers, common laborers, and what-have-you—with not a leaf-raker or a boondoggler in the lot! But this is only a part of the Golden Egg of our fable.

Normally, the railroads of this country buy enough locomotives, freight cars and passenger cars to provide regular jobs for another million American workers. And again these are most skilled workers, engaged not only in assembling this equipment but also in producing the thousand and one gadgets and materials of which it is made. But there's still more.

In normal years, the railroad industry buys 25 percent of the nation's production of coal; about 13 percent of all iron and steel products; 11½ percent of all the timber cut; and more than 9 percent of all the petroleum production, including fuel oil and gasoline. In fact, when the railroad business is profitable they spend more than a billion dollars a year for equipment, materials and supplies.

Translating these facts into terms of jobs, by relating these percentage figures to employment in the basic industries I have mentioned, it will be seen that prosperous railroads indirectly provide jobs for still another group of more than 400,000 American workers. And still the story of the job-producing capacity of the railroad industry is incomplete.

In a recent year, the railroads spent more than 45½ million dollars for electrical equipment, almost 40 million dollars for food and commissary supplies, more than 36½ millions for chemicals, paint and glass, almost 20 millions for paper and printing, 16½ millions for ballast, 9½ millions for automotive equipment and supplies, 8⅓ millions for rubber and leather goods, and almost 3 millions for cement. Think of what these expenditures mean in terms of jobs for American workers!

Is it not obvious that we have here in this one great industry the key to jobs for millions of men and women in post-war America? Yet in spite of these known or ascertainable facts, there are some people in this country who have been saying in effect:

"Who cares about the old Goose that lays the Golden Eggs Let's fence it off in a corner of the barnyard. Let's tie it up and give its feed to the other geese. Soon it will starve to death. Then we'll cut it up and get all its Golden Eggs for ourselves."

Unfortunately, there are just enough selfish, nearsighted, greedy, ambitious people to sound a faint, but still audible, amen to this iniquitous proposal. But even more disturbing is the fact that too many people have been seemingly indifferent to the fate of the railroads; too many well-meaning people have been dazzled by their hopes for new forms of transportation to bother very much about the familiar old Goose that lays the Golden Eggs.

I would not have you conclude that I am here to weep on your collective shoulder because our government is talking about lavishing immeasurable aid on the railroads' competitors. I believe, with all my heart, that this great nation has the right to the best in transportation; that it has need for all the forms of transport that we know today; that it can, and will, support these transportation agencies to the extent—but only to the extent—of their economic justification.

To tell the truth, I simply can't get very excited when I read about the billions of our dollars that some people propose to spend on super-highways after the war is over; about the airports that Uncle Sam (and that's just another name for you and me) is planning to build in everybody's back yard; about the great inland waterways that they hope will turn prairie towns into bustling seaports; about the protection and help that government intends to give to the railroads' competitors.

If these things spell progress and prosperity for this great land of ours, I'm for them. But I'm not for them if they cannot be justified economically. That—and that alone—should determine to what extent these Gargantuan dreams of the post-war planners become realities.

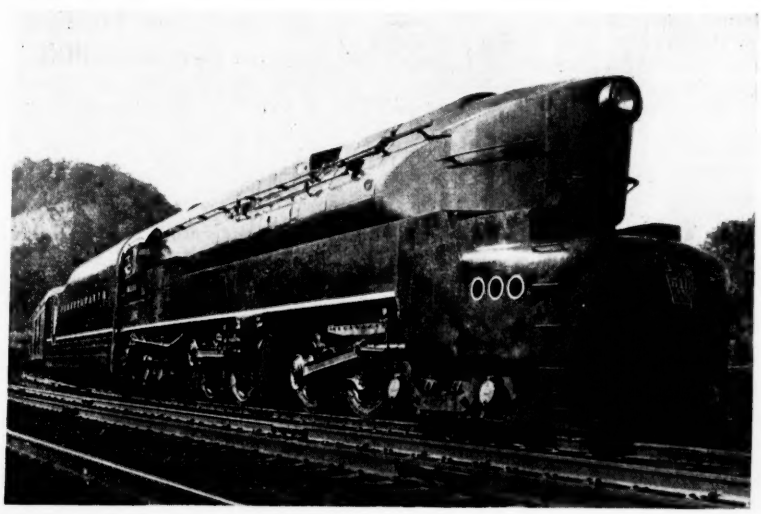
If these things can be done in the traditional American way of fairness to all concerned, I'm for them. But I'm not for them if they operate to destroy fair competition and tend to create more gross inequalities as between the various kinds of transport. That ideal of fairness—and that ideal alone—should govern the future course of governmental aid to any form of transportation.

On the other hand, I am greatly disturbed over the apathy I find in so many circles: the alarming indifference which permits a designing few to try to starve and stifle the Goose that lays the Golden Eggs of real and lasting post-war jobs for American workers.

If we, as a nation, embark on a great expansion of our transportation facilities, let's do it sensibly and soundly; with our eyes open; and with fairness to all!

If we decide to pour billions of our dollars into new facilities for transport, let's see to it that all those who employ them for profit pay a fair and reasonable charge for their use so that they may be truly self-liquidating ventures insofar as they are used for private gain!

And above all, let's stoutly refuse to plunge blindly into any gigantic transportation project under the guise of providing temporary, make-work jobs if, by so doing, we succeed only in killing . . . . .



The Industrial Construction Outlook

by

George H. Miehls

Vice President

ALBERT KAHN

Associated Architects & Engineers, Inc.

PROSPECTS in the field of industrial and commercial construction in 1945 hinge directly upon the progress of the war. Pent-up demand for building in all categories today would have to be measured in terms of billions of dollars — building which will get under way with the availability of men and materials.

The construction industry witnessed some easement the past year in the availability of structural steel. As our battle lines advance, there should also be relief in other directions. But until there are men to do the work, particularly in the field of common labor, there can be little general construction activity except of the emergency type.

Yet there is a crying need for more hospitals, apartments and hotels; more airports and other municipal and civic construction, and for new and modernized industrial facilities to meet the intense competition for postwar markets.

This work will get under way as fast as men and materials can be released without injury to war efficiency. It is to be hoped that it will be permitted as soon as the war ends in any major theatre. Construction, like the automobile industry, reaches into very segment of America and gives work to many hands both directly and indirectly.

If the construction industry is given the go-ahead immediately after one phase of the war is over, it can take up much of the slack in employment while industry is in process of reconversion. It can act as an employment cushion.

From that social function it can proceed as a powerful lifting force in our postwar economy. It is my considered judgment that we will see a renaissance of construction in the immediate postwar years rivaling or even surpassing anything we have witnessed in the past.

Such optimistic opinions voiced in general conversation are immediately challenged with questions as to the effect of emergency plant construction upon the normal industrial facilities of the country. "Won't all these warplants mean that we will be industrially overbuilt after the war?" is frequently asked.

The answer is decidedly "No" for several conclusive reasons.

In the first place, so much glamour and drama have been thrown around the most spectacular of these plants that many people assume they comprise a larger proportion of America's production plant than is actually the case. The latest available comparative data I have seen show that all emergency warplant construction amounts to about 25 per cent of the total production facilities existing in this country prior to the war.

While 25 per cent might sound like a sizeable addition to our manufacturing plant, there will be no such addition, because only a fraction of these warplants are likely to be converted to civilian goods.

All war emergency plants might be grouped into four general types:

1. Government arsenals for production of artillery, tanks, torpedoes and similar weapons. Many of these plants will not be available for civilian use. They were designed as permanent additions to our defense facilities and will be operated by the armed forces on perhaps limited production, research or experiment, or will be kept as stand-by protection.

2. Tremendous single-purpose plants located far inland where all parts for intricate war weapons are built on one manufacturing site for speed of production and isolation from enemy bombers. These plants are too large for acquisition by any but the largest corporations and because the locations of some of them were dictated by manpower sources created by the war and not by strategic marketing prospects, they would seem to have little postwar utility except perhaps as storage warehouses. There is little likelihood of their entering into competition with America's going production facilities.

3. Semi-permanent type plants built for a specific war item and not intended for permanent operation. We called them "five-year plants" because that was the maximum production life expected of them when they were built. The purpose in the design of these plants was to save critical materials, speed construction and get building costs as low as possible. Obviously such plants would be a poor investment for a manufacturing organization planning permanent operation. It seems probable that many of these plants will be razed for salvageable materials.

4. War plants built for permanency and convertible to civilian goods. Of all war plants, these comprise an indeterminate fraction, but it is not large. Plants in this category were for the most part completed before the spring of 1942, at which time the shortage in building materials became most critical. Even these plants which are converted to peace goods will require extensive alteration in layout, and in materials handling, lighting and ventilation processes—all of which spells work for the construction and supplying industries.

There is a related influence plants in this latter category will have on postwar industrial building—the influence of price competition. It is a little like the style competition in the automobile industry in normal times: When one manufacturer produces a popular style leader, competitors in that price field have to go him one better. These plants, built for permanency in the early 1940's, have every modern facility for high speed, low-cost volume production. They will produce cheaper than older plants in the same industry, and competitors will have to modernize their manufacturing facilities to meet this competition. Converted war plants will thus be an asset, rather than a deterrent, to the industrial construction industry, because they will compel the modernization of all manufacturing facilities with which they compete.

There is still another factor to be considered. Many plants now building war goods were idle or nearly so before the war, and most will revert to idleness. Still others were so far along the road to obsolescence just before the war that the management had about decided to replace them with new plants. They were converted to war goods, but they will not be reconverted. Plants so retired from the civilian production picture will act as an offset to converted war plants.

It must be obvious by now that there is little to fear from the addition of emergency war plants to America's production facilities. On the contrary, new postwar industries will require modern plant housing. Our prewar manufacturing facilities will require modernization and expansion to meet deferred civilian demand and to rebuild inventories. Airports are in great need, railroads require modernization rights-of-way and rolling stock. Cities need medical, social and commercial construction. People want houses. Everywhere you look there is building to be done. It all adds up to the most active years ahead the construction industry has ever faced.

Catlettsburg Coal Loading Dock to Cost $500,000

A loading dock estimated to involve expenditure of $500,000 is proposed on a 27-acre site at Catlettsburg, Ky., by the Utilities Elkhorn Coal Co. with operation scheduled before fall of 1945.

J. E. Bowman, of Pikeville, vice president of the company, has announced that a contract has been let to the Mott Core Drilling Co. for exploring the site and that the work is ready to start.

When the core tests have been made, the coal company will begin plans for the railroad track layout and dredging. These two contracts are to be let within the next five weeks, according to Mr. Bowman.

No definite decision has been made on the loading equipment, although both the rotary and lift type dumps are being considered.

Capacity of the coal dock would be about 2,000,000 tons yearly. The five tracks to be built by the Chesapeake & Ohio Railway would have a storage capacity of 250 railroad cars.

Purchase of floating equipment is not being

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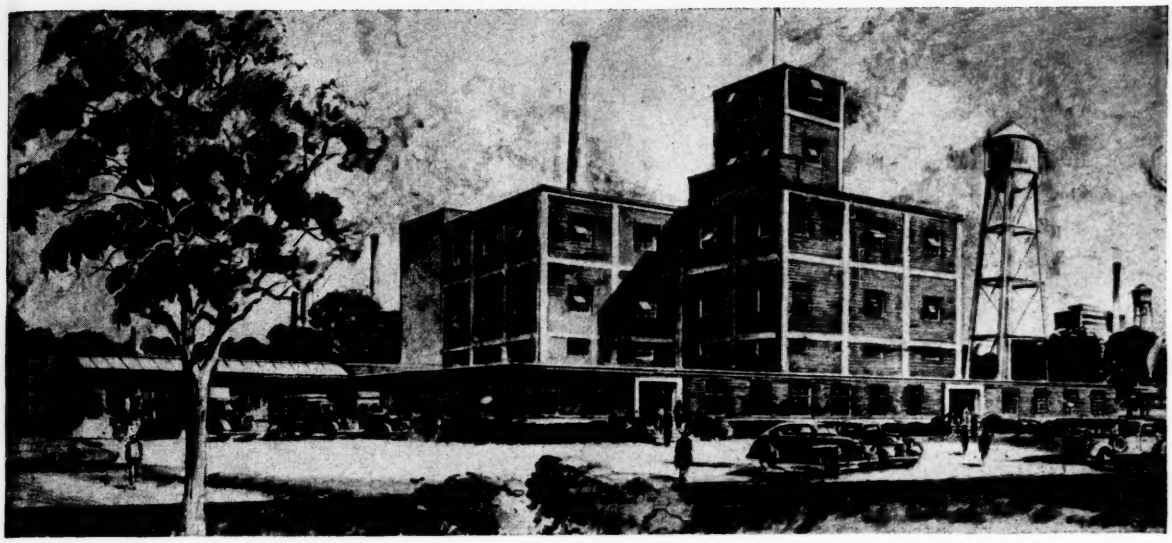

Above—New $750,000 rice plant operated at Houston, Texas, by Converted Rice. The engineer-contractor was W. S. Bellows Construction Company. Lockwood and Andrews were the consulting engineers.

SOUTHERN RICE — *world food commodity*

AMERICAN rice growers, the majority of whom are concentrated in Louisiana, Texas and Arkansas, are now making extensive plans for handling and drying rice in bulk, a step brought about by the rapid trend toward use of combines in harvesting the cereal grain that grows so successfully in the prairie regions areas of much moisture and high temperatures.

The advanced method of gathering the kernels which most Americans know as a pearly grain cooked as a vegetable or dessert, is rapidly displacing the former prevailing system employing grain binders drawn by tractors or animals. A relatively small area along the Mississippi River harvests its rice with sickles and cures the grain on the stubble, manually tying it into bundles.

Growers have already constructed a considerable number of bulk warehouses and driers and are making plans for additional installations, according to Homer L. Brinkley, general manager of the American Rice Growers Cooperative Association, with headquarters at Lake Charles, La. The shift in harvesting practices, he says, entails changes and additions at the mills to enable them to receive the rice in bulk instead of in sacks.

What is understood to be one of the largest rice drying units in the South is the new plant built at Devers, Texas, at a cost of $125,000. Owned by a division of the Association, the installation has a daily capacity of 4,500 barrels of rice and its hopper is capable of receiving 6,000 barrels a day from the field. Its bins can hold 20,000 barrels.

The Devers unit is one of the newest and largest of a number of such units in Texas. Another new unit is located at Stowell. This also was recently finished and its construction involved expenditure of around $18,000. Plans for a plant to be erected at Garwood, Texas, have been revealed.

One Houston engineering concern has announced that at least ten new plants will be constructed in the Louisiana-Texas territory and that they will be completed by August of this year. Designed in typical grain elevator style, the plants will contain bins in a variety of sizes up to 2,000 barrels and will include conveyors, fan rooms and an unloading house.

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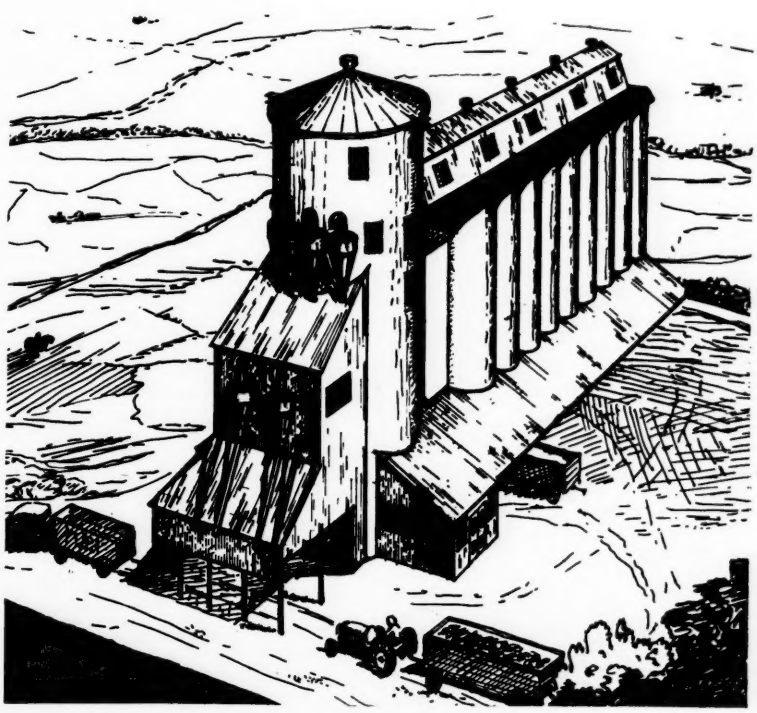
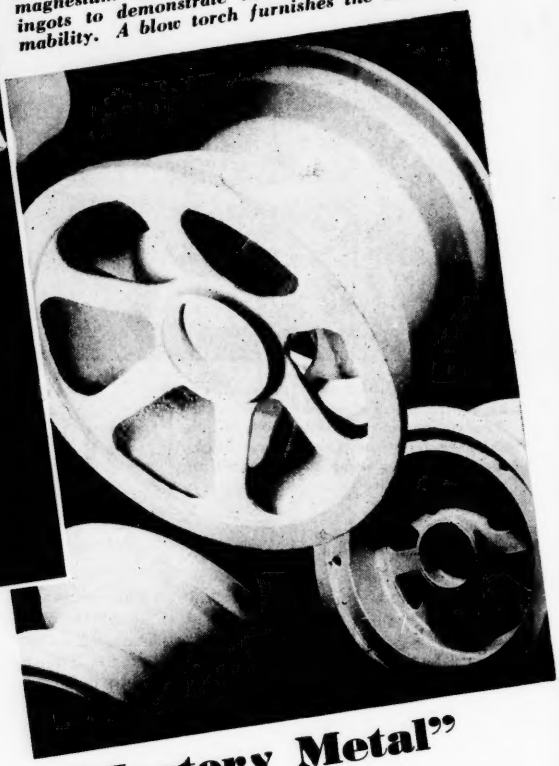


Right—Rice plant to be constructed at Garwood, Texas, for William K. Lehrer. The Central Engineering Office is the architect.

Left—Mrs. Connie Sullivan, wife of Memphis, Tenn. fire chief, grills spare ribs on a magnesium tray supported on magnesium ingots to demonstrate the metal's inflammability. A blow torch furnishes the heat.

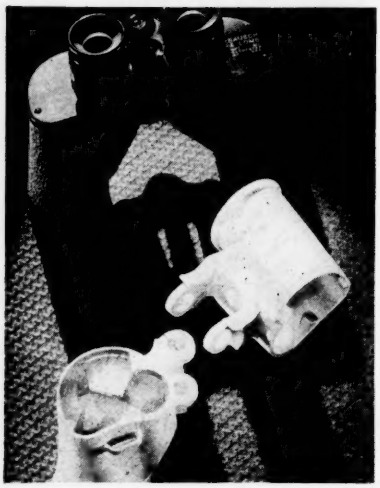


MAGNESIUM

"Mystery Metal"

MAGNESIUM, sometimes called the "mystery metal" despite its rank as third most abundant in the earth, is now made into the lightest metallic components of warplanes and after the war is expected to become an important factor in American economy, if not throughout the world.

Below — Magnesium binocular parts.



In the words of Dr. Willard H. Dow, president of the chemical company which has produced the silvery featherweight continuously since its first development in this country before the first world war, "magnesium holds within itself a greater power to increase wages while at the same time decreasing costs than do all the laws and all the politicians on earth."

Magnesium fabricating interests connected with Alcoa, who produce aluminum as a companion lightweight metal, believe magnesium has considerable prospects in the automobile industry, in addition to its present high consumption by plane manufacturing; that the outlook for use of magnesium in buses and trucks is more encouraging, and that applications in reciprocating equipment such as textile machinery also look bright, among other possible uses.

Both the Dow and the Alcoa concerns have substantial investments below the Mason and Dixon line. Dow Chemical Company operates the multi-million dollar plant at Freeport, Texas, where seawater is siphoned from the Gulf of Mexico at the rate of 250,000,000 gallons a day to go through huge vats, tall towers and miles of pipe and emerge in part as magnesium for airplanes and other war equipment where lighter weight is essential.

Aluminum Company of America's southern operations are centered around the other silvery featherweight—aluminum. However, its northern offspring, American Magnesium Corporation, is a fabricator of magnesium. Revere Copper and Brass, too, is a fabricator, operating a plant for the purpose southwest of Baltimore.

The most striking quality of magnesium is its lightness. Its weight is 23 per cent that of iron and 64 per cent that of aluminum. Officials of the industry point out that wherever there is mass in motion, lightness may lead to reduced operating costs, better performance and more payload. Magnesium is pointed to as the answer. One of the problems that must be overcome is the view that magnesium is a laboratory curiosity or something used in manufacture of airplanes.

Dow has made a wheelbarrow to demonstrate that magnesium is a natural and as head of that company says, "the inevitable material of construction for anything that has to be moved." The one-wheeled vehicle weighs 30 pounds, which means that a workman has less deadweight to move by using it than when

pushing a barrow of heavier metal. He thus can push about 55 pounds additional payload.

Magnesium in its pure state is a relatively weak metal, just as are many others. Alloyed with small quantities of other metals, however, its strength is greatly increased. Because of this, leaders in the industry believe the magnesium alloys should have many structural applications below temperatures of 400 degrees Fahrenheit. Subnormal temperatures bring about only negligible changes in magnesium alloy strengths.

Magnesium alloys are adaptable to present day fabricating and assembly methods. They can be cast in sand, in permanent and semi-permanent molds and in die casting machines. Revere does some of these near Baltimore, and extrudes the metal in rod, tube and bar form. Magnesium alloys can be rolled into sheet and plate and worked in hammer and press forgings. Other forms include rolled strip, ribbon and alloys for deoxidizing purposes. The alloys are adaptable to maching and welding.

A substantial proportion of the country's magnesium output is said to go into incendiary bomb production and into other pyrotechnic products such as flares and tracer bullets. Largest single use in the group is understood to be the incendiary bomb, which consists of a magnesium casting weighing slightly more than a pound and containing thermite, a mixture of aluminum powder and iron oxide. The magnesium casing provides both a lightweight case and adds to the intensity of the fire when the thermite reaction becomes hot enough to ignite the magnesium.

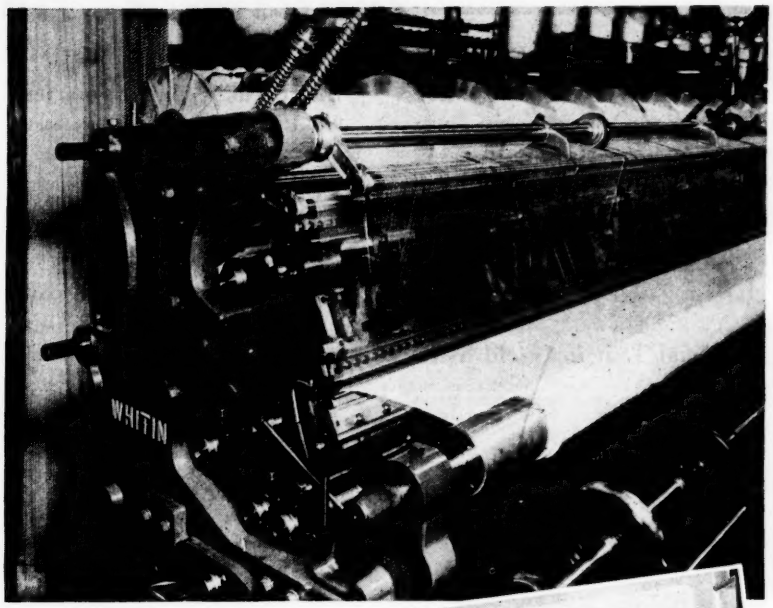
Fear of magnesium as an inflammable metal is a too general belief, according to the magnesium industry. Dr. Dow says he has "long since lost patience with those who talk about magnesium corroding or catching fire." Public education to dispel the fear is one of the steps being taken. Just last month, a demonstration of the safety of magnesium was made at Memphis, Tenn., before representatives of 500 fire departments. The wife of the Memphis fire chief cooked spare ribs on a magnesium grill supported on magnesium ingots and heated by the direct flames of a blow-torch.

Salt water and salt spray are, in general, corrosive to magnesium and may cause severe attack, some authorities point out, and precautions should be taken to prevent moisture being trapped in crevices or low spots. The best commercial magnesium alloys usually resist the action of inland atmospheres satisfactorily. The metal can be protected by a chemical coating followed by painting. However, the problem is no greater than with other metals.

Characteristics of magnesium emphasized for some applications are its relatively high coefficient of thermal expansion, its low electrical conductivity and its non-magnetic property. Its etching qualities are described as good for photo-engraving work and it is recommended for certain chemical and metallurgical uses because of its deoxidizing properties.

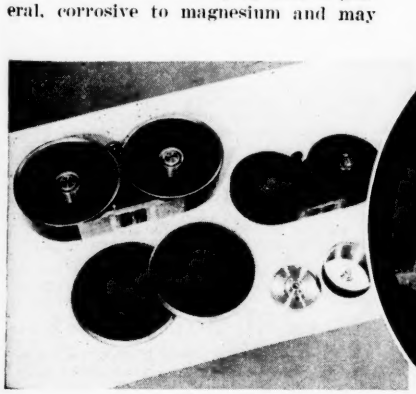
Two factors seen influencing use of magnesium after the war are the quantity of the metal available and the workers familiar with its fabrication. Both are favorable. Production prior to the current war was around 6,000,000 pounds annually. Expansion of private industry

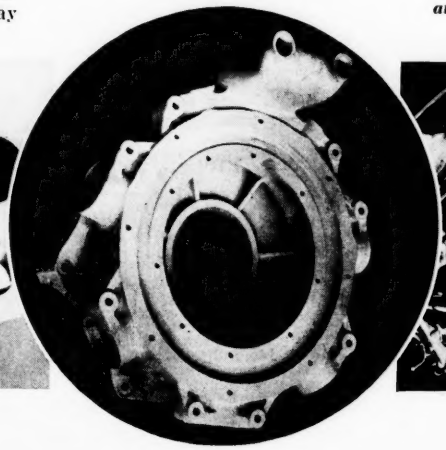
(*Continued on page* 62)

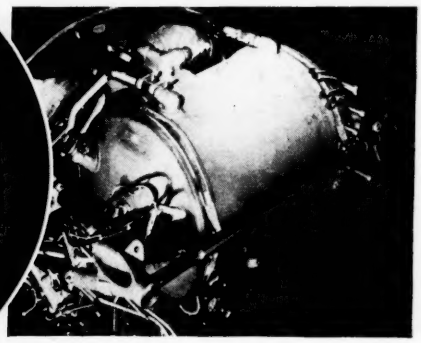


Above — Textile machines are considered a bright field for consuming the country's war-expanded magnesium output.

Below—At left is a camera assembly of magnesium. In the circle is shown a magnesium radial engine crankcase. The Thunderbolt oil tank at the right is made of the same silvery, feather-weight metal. Airplane manufacturers are important consumers of magnesium.







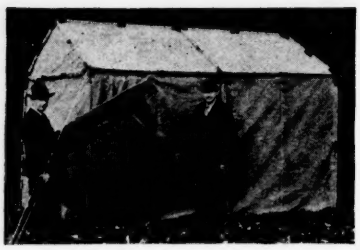
Industrial News

Army-Navy "E" for Connors

Connors Steel Co., Birmingham, Ala., received the Army-Navy Production Award for excellence in war production at ceremonies held at the company's Birmingham plant February 9th. The principal war product of this company during the past months has been fragmentation bomb bodies. Connors is the largest integrated supplier of this important component, producing the ingots, rods and wire and fabricating and machining the bodies in one plant. The company has also produced substantial quantities of strip and bars, alloy and carbon steel.

Special Tent for Field X-Rays

This special tent has a novel construction which prevents even the tiniest flicker of light from penetrating to the interior. In it, X-ray pictures of injuries suffered by United



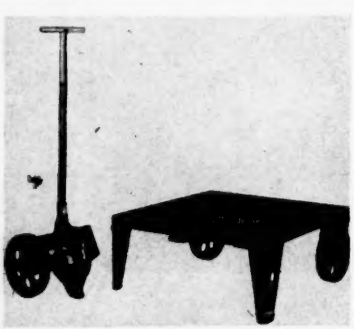
States military forces in action are made, it being particularly valuable in this field when the surgeons must know where a piece of steel is imbedded in a wounded man. Made of rubber and fabric, the tent was developed by the Army Medical Corps, and is being built by The B. F. Goodrich Co., Akron, Ohio. They are now being used on many battlefields where they are erected as part of field hospitals immediately back of the fighting fronts.

Transport With 4-Way Floor Plate Deck

Application of 4-way floor plate to the standard Turner Transport chassis increases considerably the various uses of this unit of the Turner system of materials handling, say the manufacturers, Factory Service Co., of Milwaukee, Wis.

The floor plate is welded flush with the top of the chassis on the angles of the frame. It is reinforced on the under side by two heavy angles. The "non-skid" feature keeps metal parts from "walking" off easily when the transport is in motion. Further, the embossments provide point contact with hot materials which allows some air space between them and the steel deck, eliminating warping of the deck.

The transport is the foundational unit upon which the entire Turner system is based. It can be moved in restricted space by the hand jimmy, power lift truck, crane, tractor or conveyor. With Turner piling stakes, the load may be expanded vertically to any practical height, it is claimed. Steel or wooden bin sections and section trays also interlock one on another on top of this transport, thus making available bins as high or low as the particular job requires.



Snare Takes Larger Quarters

Frederick Snare Corp., New York, contracting engineers, specializing in difficult and unusual foundation and engineering problems of harbor works, railroads, industrial plants, etc., have moved to new and larger offices in the Woolworth Bldg., 233 Broadway, New York, 7, N. Y., and have opened a new office in Philadelphia.

Revolutionary Engine Discovery Announced by Cooper-Bessemer

An entirely new discovery in the Diesel engine field, which will enable the engine operator to use either gas or oil as fuel without any electrical sparking device, and which will cut fuel consumption of gas engines by from 20 to 25 percent, was revealed recently by Ralph L. Boyer, chief engineer, of The Cooper-Bessemer Corp., Mt. Vernon, Ohio, Diesel manufacturers.

In an interview, Mr. Boyer said that the new discovery is the result of experimentation which began in 1928. Recently efforts have been rewarded by the successful operation of a natural gas engine on the Diesel principle. This enables the unit to operate on a wide variety of fuels including fuel oil, natural gas, manufactured and coke oven gases, sewage gas, and refinery by-products, he said, adding, "The conversion from liquid to gas fuel is as simple as the closing of one valve and the opening of another with the engine operating continuously at full load. Although conversion from one fuel to another has been possible in the past, it has always been necessary to shut down and exchange major or minor parts of the engine.

"The new principle will enable the engine to have the same fuel economy regardless of the type of fuel used. It raises the normal 25 percent thermo-efficiency of the gas engine to the 35 percent thermo-efficiency common in Diesel oil engines."

Honeywell Opens Houston Sales Office

Formation of a new sales zone, with headquarters in Houston, Texas, has been announced by the Minneapolis-Honeywell Regulator Co., makers of thermostatic controls. The zone will encompass the territory in the Southwest formerly under jurisdiction of the Atlanta zone and will maintain offices in Houston, Dallas, Tulsa and New Orleans. Robert Mallory, formerly branch manager of the Houston office, has been named as manager for the new Southwestern Zone.

U. S. Burlington Plant Starts March 1

United States Rubber Co. will start manufacturing operations in Burlington, N. C., about March 1, it was announced recently by E. G. Brown, general manager of the company's lastex yarn and rubber thread division. Yarns for surgical stockings for the armed forces will be scheduled first for production. On completion of all necessary war work, a long range program will be inaugurated to supply lastex for the hosiery trade.

Hercules Annual Report

The 1944 annual report of Hercules Powder Co., Wilmington, Del., showed net earnings after all charges of $4,823,855. After payment of $524,928 dividends on preferred stock, net earnings applicable to the common stock were equal to $3.26 a share on 1,316,710 shares outstanding, after a provision of $200,000 for contingencies.

In 1943, net earnings of the company were $5,704,511, after a provision of $1,100,000 for contingencies. These earnings were equal, after preferred dividends, to $3.93 a share on 1,316,710 shares of common stock outstanding.

In a letter to stockholders, Charles A. Higgins, president, said the declines in sales and profits during 1944 were caused by shifts in war production, higher rates of federal income taxes, and somewhat higher costs.

P. and N. Promotions

W. I. Rankin, vice president and traffic manager of the Piedmont and Northern Railway, recently announced the appointments of J. H. Wright as general freight agent, and H. R. Ellis as assistant to the traffic manager. Mr. Wright, a native of Georgia, entered service with the P. & N. ten years ago as clerk. Mr. Ellis has been with the company six years, starting as a clerk in the traffic department.

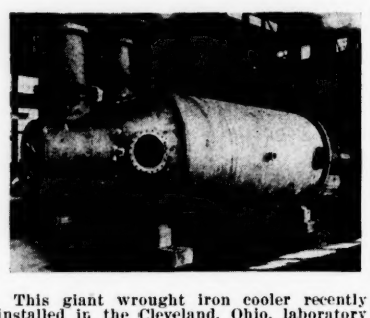
Lunken Passes

Eshelby F. Lunken, 54, president of The Lunkenheimer Co., Cincinnati, Ohio, valve manufacturers, died suddenly January 25, 1945, of a heart attack. Mr. Lunken was a leader in business and civic affairs and was actively interested in aeronautical development, having been a moving spirit in the establishment of Lunken Airport. He was connected with The Lunkenheimer Co. for 35 years and served as president for 26 years. At the time he was stricken, Mr. Lunken was making preparations to attend the annual dinner of the National Association of Manufacturers as a guest of honor, The Lunkenheimer Company having been one of the Cincinnati firms which founded the NAM.

Thompson New President of Frisco Lines

Frank A. Thompson, trustee and chief executive of the St. Louis-San Francisco Railway, has been elected President of Frisco Lines of Texas by the railroad's board of directors. Mr. Thompson, who was appointed sole trustee January 1, also was elected president of the Frisco Transportation Co., a wholly owned subsidiary.

Giant Coolers Installed at Cleveland Air Laboratory



This giant wrought iron cooler recently installed in the Cleveland, Ohio, laboratory of National Advisory Committee for Aeronautics was designed to withstand the vigorous corrosion encountered while devouring the hot gases being expelled from airplane engines under test. Alternating wet and dry conditions set up in the cooler as the gases pass through the water sprays are the causes for this corrosive attack which is similar to that found in a smokestack when firing is intermittent, except that it is greatly magnified.

By cooling the engine gases, this equipment makes possible the approximate duplication of atmospheric conditions prevailing at various altitude levels, including exhaust pressures encountered by planes penetrating the stratosphere.

The gas from the airplane engine exhaust enters through one of the cones at the front of the tank, which is 32 feet long and 9 feet in diameter. As the hot gas passes through the sprays in the cone, the spray is almost totally vaporized. The gases then continue into the main cooling chamber, passing through a series of sprays from a continuous series of nozzles supplied by branch piping connected with a central feed line running along the bottom of the tank. The gas is finally discharged to the atmosphere by means of a vacuum fan.

The illustrated tank is one of six that have been installed at the Cleveland laboratory. All piping and nipples, as well as the tank proper, are fabricated of wrought iron. York Corporation designed the equipment which was built by Ohio Machine & Boiler Co., Cleveland.

Eight Foot Fluorescent Lighting Fixture

A new commercial lighting fixture employing 93" fluorescent cold cathode low voltage lamps is announced by General Luminescent Corp., 638 S. Federal St., Chicago 5, Ill. The manufacturer states that in addition to the eight foot fixture, assemblies are also available for continuous line lighting. The units are equipped with the 10,000 hour 'Colovolt' lamps which are instantaneous in starting and do not flicker. The manufacturer says the advantages of the long life expectancy of the colovolt lamp may be realized, even when the lamps are constantly turned on and off.

Gosnell Promoted By Lukens

Everett C. Gosnell, who has been chemical engineer with Lukens Steel Co. since 1937, has been appointed manager, chemical division of Lukens and its subsidiaries, By-Products Steel Corp. and Lukenweld, Inc., it was announced recently by J. Frederic Wiese, vice president in charge of combined sales of the three companies. Mr. Gosnell, who joined Lukens in 1937, is a member of the American Chemical Society, the American Institute of Chemical Engineers, the American Co-ordinating Committee on Corrosion and the Alpha Chi Sigma Chemical fraternity.

Menger Appointed Production Manager of Armstrong Cork

Appointment of F. B. Menger as general production manager for all the production activities of the Armstrong Cork Co. was announced recently by C. F. Hawker, Armstrong's vice-president in charge of manufacture. At the same time Mr. Hawker announced the appointment of G. B. Blaisdell as production manager of floor and munitions production. Mr. Menger joined the Armstrong organization in 1936 as a Project Engineer. Mr. Blaisdell, who joined Armstrong in 1922 in an engineering capacity, rose through various engineering and production positions.

Atlas Cement Acquires Wabash Properties

Blaine S. Smith, president of Universal Atlas Cement Co., New York, has announced the purchase of certain physical assets of the Wabash Portland Cement Co., located at Osborn, Ohio, consisting principally of lands, buildings and machinery embraced in the Osborn cement plant. After extensive repairs and improvements, the plant, which has been shut down for more than a year, will again be placed in operation. Acquisition of the Osborn plant will enable Universal Atlas to give improved service to its customers in southwestern Ohio, southeastern Indiana and eastern Kentucky. The Osborn plant, which has a capacity of about two million barrels per year, will manufacture Universal portland cement, Atlas duraplastic air-entraining cement, Atlas high-early cement, and Atlas mortar cement.

Searle Heads Worthington

Clarence E. Searle, formerly vice president in charge of sales of Worthington Pump and Machinery Corporation, was recently elected president of the corporation, succeeding Harry C. Beaver who has become vice chairman of the Board of Directors, and chairman of the Corporation's management committee. Other shifts in Worthington personnel include, Hobart C. Ramsey to the post of executive vice president; Edwin J. Schwanhauser, former vice president in charge of operations in Buffalo, to vice president in charge of sales, and Leslie C. Ricketts, manager of the corporation's Harrison Works, moved up to a vice presidency.

Chemical Meet Cancelled

The annual Spring meeting of the American Chemical Society, largest organization of professional chemists in the world, will not be held in 1945, it has been announced by Dr. Charles L. Parsons, secretary of the society, following action by the board of directors. Practically the entire membership of the Society is engaged in essential war work, it was explained by Dr. Parsons, who expressed the Society's desire to cooperate fully with the Government in meeting difficulties of transportation.

Southern Pine Men Join O. P. A. Committee

Three additional members have been appointed to the subcommittee of the Southern Pine Industry Advisory Committee, the Office of Price Administration has announced. The new members will represent small producers of Southern pine lumber in Alabama, Mississippi, North Carolina, Maryland, and Delaware. Announcement of the appointment of this subcommittee was made several weeks ago, when four members were appointed to represent Georgia, Florida, Kentucky, Tennessee, and Virginia. Its purpose is to collect production and cost data of small mills. Three more members are expected to be appointed soon.

The three new members are: H. L. Meadows, Jackson, Miss., Claude W. Adams, Cambridge, Md., and E. C. Morris, Mocksville, N. C.

Hudgins Made Superintendent of Kennametal's Latrobe Plant

Kennametal Inc. of Latrobe, Pa., has appointed R. S. Hudgins as plant superintendent, succeeding W. E. Newcomer, resigned. Mr. Hudgins was graduated from the Virginia Polytechnic Institute in 1934, with the degree of B.S. in Mechanical Engineering. For six years thereafter he was employed by the Ingersoll Rand Co., serving successively as machine operator, inspector, foreman, assistant departmental superintendent, and production engineer. Following that he was machine tool supervisor for one year in the munitions division of the American Type Founders. He entered the employ of Kennametal Inc. in December 1941 as their tool engineer and representative at West Hartford, Conn., and has been serving in that capacity until his promotion.

Holt On Tyson Bearing Board

William K. Holt of San Antonio, Texas, has been elected a director of the Tyson Bearing Corp., Massillon, Ohio, according to announcement by E. R. Galvin, president. Mr. Holt is president of the William K. Holt Machinery Co. of San Antonio, one of the largest distributors of heavy construction machinery in the southwest.

Following many years with the Holt Manufacturing Co., forerunner of the Caterpillar Tractor Co., he founded the Mexico Tractor & Machinery Co. of Mexico City. He was president of that organization until he resigned to form the San Antonio concern in June, 1933.

Briggs Gets Third "E"

The Briggs Clarifier Co., Washington, D. C., designers and manufacturers of oil filtration equipment, was recently awarded its third successive Army-Navy "E" for efficiency in war contracts performance.

Copper Output Declines

Domestic mine, smelter and refinery outputs of copper in 1944 fell below the high record rates established in 1943, according to the U. S. Bureau of Mines, declines for the three ranging from 9 to 12 per cent. Labor shortages were chiefly responsible for the poorer showings, said the Bureau, pointing out that in 1944 the Army did not furlough men for mining purposes as in 1943, while draft boards demands covering miners were tightened up.

Taxes in South May Retard Industry

Charles E. Wilson, president of General Electric Company and former executive vice-chairman of the War Production Board, in a recent address before a conference of electric utilities executives in Atlanta, expressed the opinion the South was "a most desirable part of the country for industrial growth," adding, "the whole trend of war production has indicated that beyond any argument."

The location of large war industries in the South has brought to the attention of industrialists the many advantages this section possesses for manufacturing. Mild

(*Continued on page* 70)

-:- TRADE -:- LITERATURE

CHEMICALS BY HERCULES

A new booklet listing Hercules chemicals, industrial explosives, and approximately fifty industries which they serve has been issued by Hercules Powder Co., Wilmington, Del. An indication of many postwar applications for Hercules chemicals in plastics, paints, textiles, film, adhesives, and paper is given by the booklet. Chemicals in the cellulose family, rosins and modifications, rosin esters and synthetic esters, terpene solvents and chemicals, explosives, blasting supplies and sporting powders, and special products are discussed.

WOMEN ON POWER TRUCKS

In view of the manpower shortage in essential and critical industries, Elwell-Parker Electric Co., Cleveland, Ohio, is again offering free copies of a 24-page illustrated booklet entitled "Lady, Will You Give a Lift?" which explains how simple it is for women to operate power industrial trucks. According to government estimates, one fifth of the new employes sought for these industries will be women. The booklet gives complete instructions for starting, steering, stopping the truck, lifting and lowering the load. It points out that it is as easy to learn to drive a truck as it is to drive an automobile, and in many respects, safer. Large illustrations and text also show how these trucks aid in production by moving materials and products, keeping machines busy. While the manual has been prepared for the training of operators of Elwell-Parker trucks, the general information it contains applies to other makes as well.

PLASTICS USES

"So You're Going to Use Plastics?" is the title of a highly informative new free "Guide Book" issued by the Eclipse Moulded Products Co., 5151 N. 32nd St., Milwaukee 9, Wis. As its name implies the purpose of the book is to help manufacturers to produce better and more economical products through plastic moulding.

CELLULOSE CHEMICALS

A handy pocket-size booklet containing the list of chemicals made and sold by Hercules Powder Company's Cellulose Products Department, Wilmington, Del., types available, their end uses, and pertinent packing and shipping information can be had from that department. Titled "Chemicals for Industry", the booklet is designed as a useful aid to technical and non-technical persons interested in the use of these products in plastics, films, lacquers, adhesives, varnishes, chlorinated rubber, printing inks, and for the flameproofing, waterproofing, and weatherproofing of textiles.

ARC FURNACE EQUIPMENT

General Electric Co., Schenectady, N. Y., has issued a new and complete catalog of their electric equipment for arc furnaces, No. GEA-4246. Fully indexed, the catalog is divided into control, switchgear and transformer sections and is amply illustrated with photographs, sketches and diagrams of various applications of the equipments offered.

PLASTICS HANDBOOK

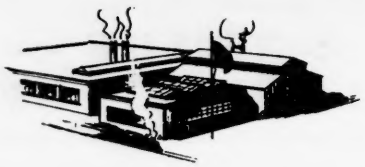
A new technical booklet, which lists and describes the results of dimensional stability tests on cellulosic plastics at high temperatures and high humidities, has been prepared by the Cellulose Products Dept., Hercules Powder Co., Wilmington, Del. Color sketches, photographs, four comprehensive tables, an explanation of test conditions, and a discussion of data contained in the sketches, photographs, and tables make this booklet a comprehensive source of engineering data.

FABRICATED DOOR UNITS

Ellison Bronze Co., Inc., Jamestown, N. Y., manufacturers of architectural bronze work, have published a new catalog of their balanced door units. Illustrated with photographs and drawings, the booklet will be of service to architects and others interested in modern construction.

MULTIPLE PUNCHES & SPACING TABLES

Two new bulletins, Nos. 306 and 306A, presenting improved lines of multiple punches and spacing tables and describing their operations, are announced by Thomas Machine Manufacturing Co., Pittsburgh 23, Pa., originators of the spacing table and large manufacturers in the spacing table and multiple punch field.



Southern Industrial Expansion — January

Federal Communications Commission, Washington, authorized a $10,000,000 program of expansion and improvements of telephone facilities between Washington and Charlotte and between New York and Atlanta, Ga., by Southern Bell Telephone & Telegraph Co.; American Telephone & Telegraph Co. and New York Telephone Co. were also authorized to supplement facilities between New York City and Atlanta, Ga., at cost of $3,536,000.

ALABAMA

BESSEMER—cars — Seaboard Air Line Railway placed order with Pullman-Standard Car Manufacturing Co.'s Bessemer plant for 500 box cars for 1945 delivery; order is divided into 250 single door and 250 two-door cars; all steel construction.

BIRMINGHAM—building—T. O. Brasfield has contract for addition to building for Dairy Products Co.

BIRMINGHAM—shop — J. F. Holley has contract at $98,840 for shop and office building for Alabama Metal Lathe Co.

GADSDEN—bottling plant—Norton & Hallmark, Gadsden, has contract at $25,000 for construction of bottling plant.

GADSDEN—plant addition—Robert & Company, Atlanta, Ga., preparing plans for addition to plant for Goodyear Tire & Rubber Co.

LAMAR COUNTY—electric line—Stuart C. Irby Co., Jackson, Miss.,has contract at $342,360 for construction of 450.6 miles of electrification line.

OPELIKA—mill addition—Pepperell Manufacturing Co., Opelika, has approval from WPB for construction of addition to cotton textile mill to cost approximately $325,000.

PIKE—extensions — South Alabama Electric Cooperative, Troy, has REA loan of $45,000 for extensions.

TUSCALOOSA—tire plant—The Austin Co., Cleveland, Ohio, has contract for construction of a tire plant for B. F. Goodrich Rubber Co., of Akron, Ohio, to cost approximately $14,000,000.

ARKANSAS

ARKADELPHIA—electric — South Central Arkansas Electric Cooperative, Inc., let contract to Harvill-Byrd Electric Co., Little Rock, for construction of 50 miles of line to serve 125 members.

HELENA—dehydrating— Delta Dehydrating Co-Operative, capital $450,000; incorporated by Al Haraway.

HELENA—plant—The Delta Fertilizer Cooperative Association, acquired old Helena oil mill; plans erecting modern fertilizer mixing plant.

FLORIDA

BARTOW—plant—Clarson & Mills, N. St. Petersburg, has contract for erection of molasses plant; cost $250,000 including equipment; Defense Plant Corp., owners.

JACKSONVILLE—expansion—L. B. Jackson Co. will occupy building at northwest corner of Park and Price Sts.; cost $75,000; priorities obtained for erection of building for laundry.

JACKSONVILLE — port facilities — City Council concurred with City Commission in approving firm of Coverdale and Colpitts, 120 Wall St., New York, N. Y., consulting engineers, in making survey of Port of Jacksonville relative to the development to take care of postwar trade; City Council to appropriate $25,000 for survey and Chamber of Commerce, $10,000.

JACKSONVILLE—power plant—War Production Board has ordered a 30,000 kilowatt electric plant to be made available for use of city.

MIAMI—rubber plant—Acme Constructors, have contract for constructing first unit of rubber plant by Florida Products Corp.

GEORGIA

AMERICUS—plant—J. T. Studstill, let contract to North Brothers, Atlanta, for construction of packing house and slaughter pen; estimated cost $23,000.

ATLANTA—building — Robert & Co., Atlanta, Archts-Engrs., preparing plans for construction of addition to Scripto Manufacturing Company building; install new equipment; authorized by Defense Plant Corp.; cost $260,000.

ATLANTA — plant — J. D. Williams, District manager of the National Cylinder Gas Company, has plans for post-war construction of $100,000 combination oxygen manufacturing plant, district offices, storage facilities and a modern display room; has a tract at 471 Peters Street, S. W.

EASTMAN—plant—L. M. Coffee, of Coffee Construction Company purchased building, plans remodeling and installing freezer locker plant; will also construct modern abattoir.

FITZGERALD — mill — Courtland Palmer, 30 Rockefeller Plaza, New York City, and Associates, acquired Fitzgerald Cotton Mills; will operate as Fitzgerald Mills Corp. with paid in capital of $300,000.

FITZGERALD — naval stores — J. Cheshire Nash of Columbia Naval Stores Co., of Savannah, will erect naval stores plant; priorities granted.

HABERSHAM — extensions — Habersham Electric Membership Corp., Clarkesville, has REA loan of $50,000, for extensions.

LAGRANGE—mill addition — Robert & Company, Archts.-Engrs., Atlanta, preparing plans for addition to the Dixie Cotton Mills.

MILLEDGEVILLE — plant — Dr. Dawson Allen, interested in construction of freezer locker plant.

FOCHELLE — plant — Wilcox County Farm Bureau, sponsoring erection of frozen food locker plant; in Lee Store building.

ROSSVILLE — mill addition — Robert & Company, Archts.-Engrs., Atlanta, preparing plans for alteration and additions to Peerless Woolen Mills.

KENTUCKY

FRANKFORT—extension lines—The State Public Service Commission granted permits to Mason-Fleming R. E. A. to construct 26 projects in following counties: Bath, Carter, Fleming, Greenup, Lewis, Mason and Rowan.

LOUISIANA

Equipment—Defense Plant Corporation authorized execution of a contract with Hearin Tank Lines, Baton Rouge, La., to provide transportation equipment for operation in the State of Louisiana at a cost of approximately $100,000.

LAKE CHARLES — casings, etc.—Sun Oil Co., Beaumont, Tex., applied for War Department permit for installation of casings, pipes, etc., in connection with seismographic operations in all of Moss Lake, Calcasieu River.

NATCHITOCHES — electric lines—Delta Construction Co., Clarksville, Miss., has contract at $19,392 for construction of 49.1 miles rural electric lines; Valley Electric Membership Corp., Natchitoches, owners.

NEW ORLEANS—addition—Delta Shipbuilding Co., let contract to Chris Larsen Co., for construction of addition to sheet metal shop at shipyard plant.

WELSH — rice drying plant — Kleiman Brothers plan construction of rice drying plant.

MARYLAND

BALTIMORE—building — Baltimore Contractors has contract for building for Brooklyn Chemical Works, Inc.; cost $40,000.

BALTIMORE—cars — Baltimore & Ohio Railroad Co. placed contract with Greenville Steel Car Co., Greenville, Ohio, for 500 steel box cars.

BALTIMORE — warehouse — Morrow Brothers, Inc. has contract at $266,580 for warehouse for Milcor Steel Co.

MT. SAVAGE — plant — Samuel Frazee, Uniontown, Pa., acquired Union Mining Co.'s buildings, land, eqquipment and mineral rights at Mt. Savage; will change name to Union Industries.

MISSISSIPPI

BATESVILLE — hosiery plant — Currie & Corley, Raleigh, Miss., have contract at $58,750, for construction of new hosiery plant.

COAHOMA — extensions — Coahoma Electric Power Association, Clarksdale, has REA loan of $50,000 for extensions.

JACKSON — plant — California Company has in blue print stage, plans for construction of large recycling plant in the Cranfield field in Adams County near Natchez.

PHILADELPHIA — plant — Walter J. Perry Construction Co., Philadelphia, Miss., has contract at $65,545, for construction of building to be operated by Wells-Lamont Co., of Chicago, Ill.

MISSOURI

St. Louis-San Francisco Railway Co., St. Louis, Mo., will spend $2,911,907 for additional improvements in 1945 as authorized by U. S. District Court; an additional sum of $103,249 will be expended for Frisco Lines of Texas making the improvement budget $4,892,829; roadway improvements total $3,310,936, including $993,941 for new rail and other track material; $705,673 for addition main tracks; $494,126 for bridges, trestles and culverts; $453,440 for signal and interlockers; $1,478,644 for mechanical improvements including $283,543 for increasing efficiency of locomotives, $846,798 for improvements to freight cars and $272,378 for modernization of passenger cars; budget includes provision for 69 miles of new rail, construction of three miles of new track near Hancock, Mo. at cost of $705,673; streamlining 10 passenger cars; conversion of seven locomotives from coal to oil, installation of 126 miles of automatic block signals between Wetumka and Staley, Okla., and equipping 2,740 freight cars with new AB brakes.

KANSAS CITY — laboratories — Mid-Continental Laboratories, Inc., incorporated with $50,000 capital, by George Wilhelm, Hickman Mills, manufacture feed products.

KANSAS CITY — plant — Dew Beverage Co., Inc., capital $50,000, incorporated by Harry J. Baruch, beverages.

POPLAR BLUFF—Robertson Truck Lines, Inc., incorporated $70,000; Clarence M. Robertson, trucks.

SAINT JAMES — mills — Iron County Lumber & Planing Mills, Inc., capital $60,000, incorporated by Walbridge H. Powell, lumber.

SENATH—**plant** — Hickory Landing Gin Co., capital $10,000, incirporated by S. R. Gibbons, Senath, cotton gin.

ST. LOUIS—expansion—Fulton Mower and Manufacturing Co., has acquired site for expansion; post war.

ST. LOUIS — improvements — Federal Judge George H. Moore has increased the expenditure frof $9,107,715 to $12,247,465, for Missouri Pacific Railroad Co., and its subsidiaries. Guy A. Thompson, trustee, for improvements on a railroad system, during 1945; grant comprises $6,476,275 for the Missouri Pacific, $1,163,960 for the International & Great Northern and $1,467,480 for the New

(*Continued on page* 72)

"Annie Doesn't Work Here Any More"

Nor does Tillie, her assistant. Both were moved to another department. Why? Well, by combining records with Uarco **continuous-strip** forms, *one* person can handle the record writing for all departments. Results show a rise in efficiency . . . time saved . . . fewer errors.

Combine Records with UARCO Continuous-Strip Forms

For example, with Uarco **continuous-strip** forms, a system—consisting of an invoice in duplicate, a sales department copy, a statistical copy, a bookkeeping copy, a delivery receipt in duplicate, a packing slip and shipping label—was combined into one *writing.* Hence, one person at one typing handled all the record writing. Saved time and expense as well as eliminating the confusion and errors caused by *separate* writing of the *same* information.

However, Uarco **continuous-strip** forms are tailor-made to meet *individual* problems. Different problems are solved by different Uarco records. Briefly, these record forms are perfectly aligned, multiple-copy forms which are scientifically designed to eliminate errors and needless duplication of work . . . record forms that keep the flow of work moving smoothly, efficiently.

It will cost you nothing to have a Uarco representative work with you. Telephone today . . . or write for added information.

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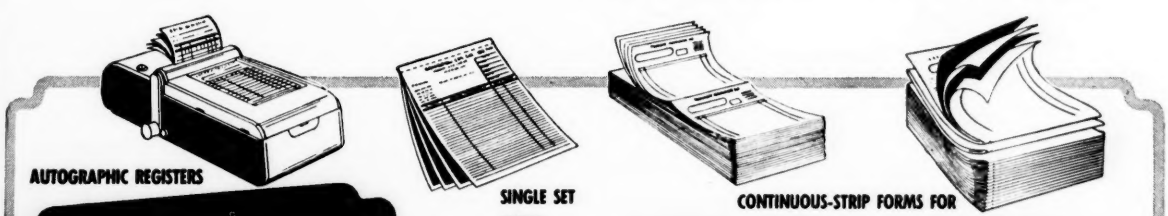
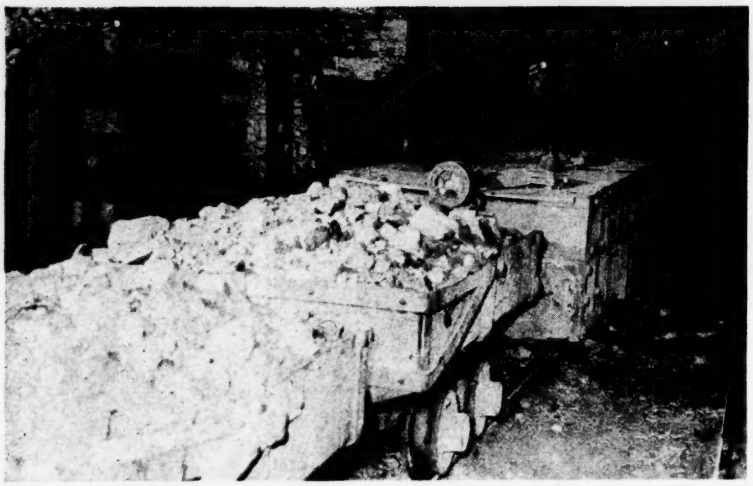


UARCO

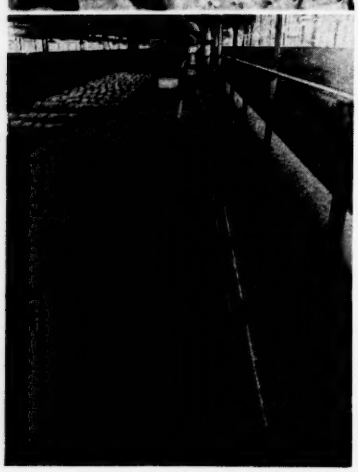
BETTER BUSINESS RECORDS



Above—Truckloads of gypsum rock are hauled to the hoist where they are lifted to the surface.

WAR PRODUCTS ACCELERATE GYPSUM USES

Below—The top picture shows the first mixing operation of the plaster in wallboard manufacture. At the bottom, the plaster board is moving along on a conveyor after being poured between two sheets of sturdy paper. Before it reaches the end, it is cut into lengths and the ends and sides sealed.



WAR has given impetus to gypsum products, and brought others to the point where they'll be heard from when post-war building gets fully under way. With millions of panels of fireproof gypsum wallboard, roof decks and siding going into barracks and other wartime construction, helping to establish a great record for speed and safety in the building program, the benefits of this prefabricated type of material have been widely recognized by builders and architects.

One of nature's most abundant substances, and turned out in forms devoid of glamor, gypsum is not the sort of material that captures the public's imagination, but for half a century it has been an increasingly strategic part of the building industry and it is now reaching out into other important fields. For years before the war, more than 95 per cent of all plaster base coats were gypsum, and utilization of a combination gypsum lath and gypsum plaster was standard for modern construction. Wallboard was also gaining extensive use.

Several other products, which were new before Pearl Harbor, now have been developed to the point where they'll become important in all types of building. One of these is acoustical plaster, which will bring sound conditioning within reach of most home owners and add immeasurably to the comfort of family life. A porous form of gypsum plaster, its air spaces "blot up" as much as 50 per cent of the sound hitting it, preventing reverberations that constitute the noise which jangles nerves.

Another is a fireproof sheathing which comes in large panels that save one-third on erection time, as well as adding greatly to the fire safety. Available at low cost and usable with very little waste, it will make a strong bid for the sheathing market.

Third is the outgrowth of prewar gypsum insulating lath and wallboard which featured aluminum foil on one side. Research has proved that these products, when placed on the inside face of exterior stud walls, with the aluminum side against the studs, provide an exceptionally effective vapor barrier, as well as insulation and fire protection. Since in modern tightly-built houses condensation within exterior walls, without a vapor barrier, has been a serious problem, causing damage to the construction, interior decoration and furnishing, this discovery is another certainty for popularity honors.

On the basis of these developments, the outlook for increasing the present 4,000,000-ton volume of the industry is rosy.

Yet there are still other prospects that keep the industry's planners busy. The war has accelerated growth of the market for industrial plasters. Because this type of gypsum, when set, forms an invariable surface, it is ideal for casting many types of parts. Accuracy is so great that in many cases machining is unnecessary. Also, this invariability makes it suitable for models of production-line products, since the items as they come off the line can be checked with the plaster models to assure accuracy.

These two uses of industrial plasters have caught on in many industries, particularly aircraft.

The bulletproof gas tanks of fighting planes and bombers are molded over gypsum forms. As "land plaster," gypsum is used for fertilizer. It is also utilized as dental plaster. It plays a part in the production of petroleum products, textiles, paper, crayon, paints, plate glass, face powder, chicken feed, matches, sulphuric acid, relief maps, window shades, yeast foods, blackboards, toys and many others.

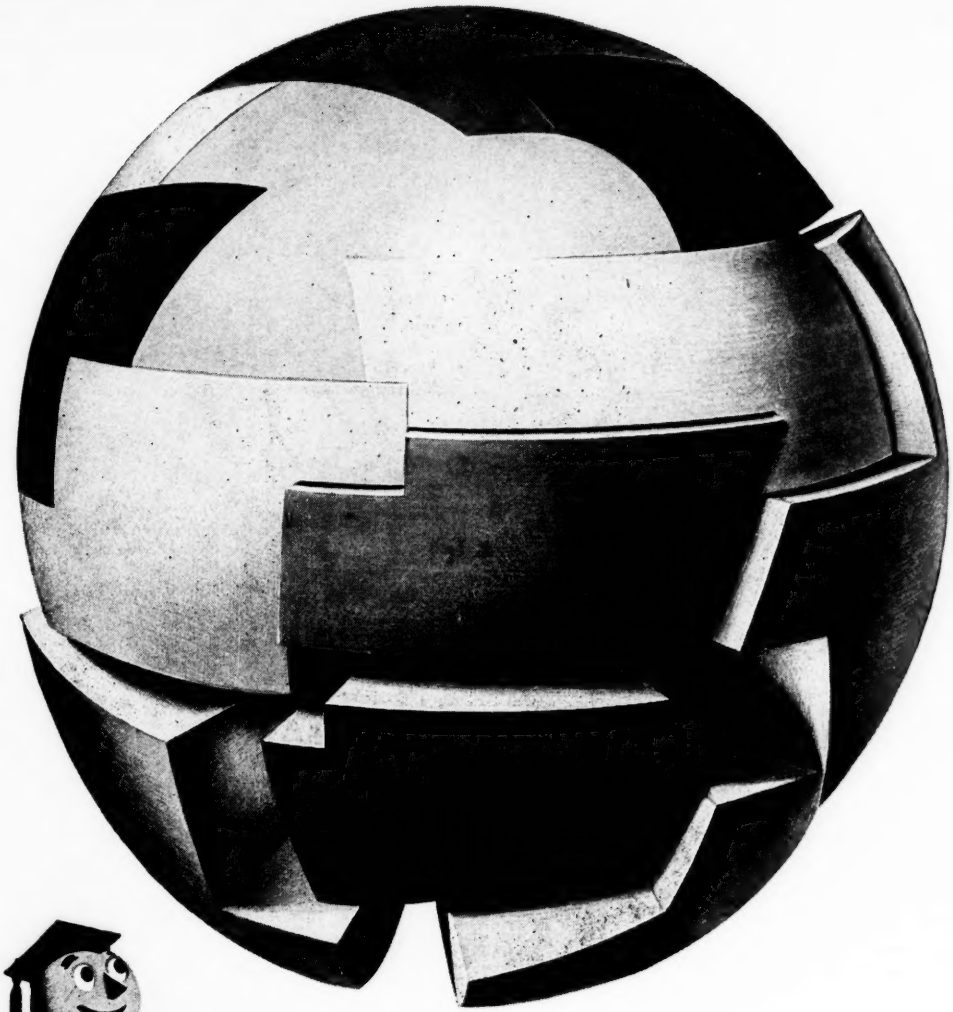
Gypsum is one of the earth's most common minerals: hydrous calcium sulphate ($CaSO_4.2H_2O$). It is mined and quarried in sixteen states and there are great deserts of it stretching like white sand in the Southwest. It is also found on the other four continents.

After removal from the ground it is calcined. This is a process of dehydrating or removing a large part of the chemically combined water and the gypsum becomes $CaSO_4.\frac{1}{2}H_2O$, the common plaster of Paris. When water is added to calcined gypsum it takes up or combines with the same amount of water that was driven off in the calcination process and reverts to gypsum, $CaSO_4.2H_2O$. For building materials a retarder is added to delay setting.

Most gypsum is mined or quarried, crushed and calcined in one spot, often is processed into its various commercial products as well.

When unloaded from the cars carrying it from the mine or quarry, the gypsum rock is moved into bins, then into crushers, from which the gypsum is loaded into kettles or a rotary kiln to be calcined. When the gypsum hits the hot steel bottom it begins to boil like thick soup, bub-

(Continued on page 66)



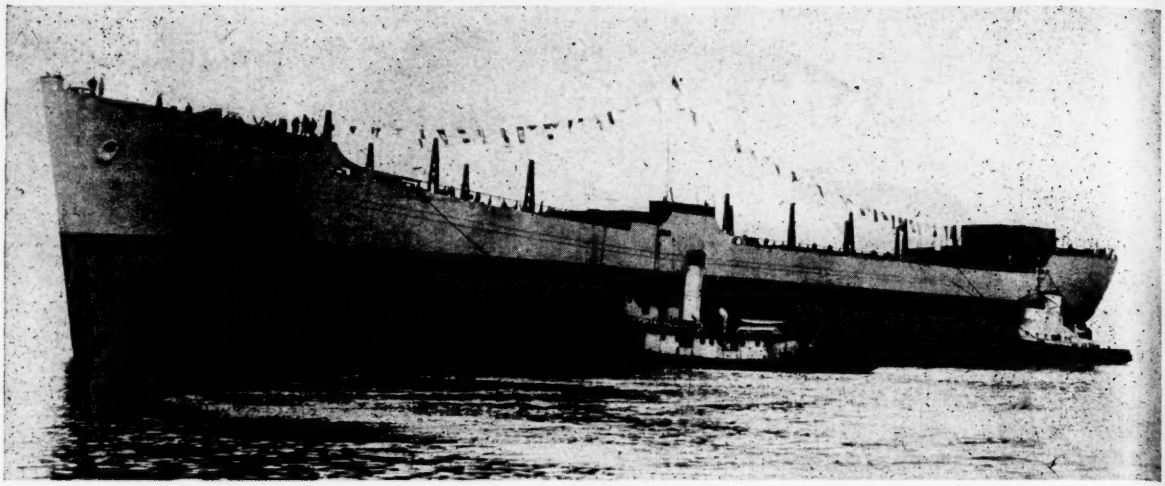
How many ways can you build a globe?

As many as you please—provided the parts fit!

The communication system which carries your voice across a continent and beyond, works because its millions of interlocking parts are engineered to fit. There are thousands of switchboards, 26 million telephone instruments and 65 million miles of circuits.

Each individual part, no matter how ingenious, is merely a unit in the whole system. The final test is—does the system work? This is the engineering ideal of Bell Telephone Laboratories. It has helped to create the greatest telephone system in the world.

BELL TELEPHONE SYSTEM



Above—The Venore, world's largest and fastest ore carrier, just after it was launched last month at the Sparrows Point yard of the Bethlehem Steel Company. Biggest ship built at the Port of Baltimore, the Venore is one of four being constructed for operation by the Ore Steamship Corporation, Bethlehem subsidiary. She has an estimated deadweight of 24,000 tons, overall length of 582 feet, 4 inches and a beam of 78 feet. Capacity of her ore hold is 402,000 cubic feet. The expected trial speed is around 16½ knots at the designed load draft. She and her four sister ships will be driven by the highest pressure steam plant installed in a cargo vessel in the United States. The sponsor was Senora Maria Teresa Escalante Bustamante, daughter of Dr. Diogenes Escalante, Venezuelan ambassador to the United States.

Magnesium, "Mystery Metal"

(Continued from page 55)

and construction of government plants have raised this figure to the neighborhood of 500,000,000 pounds.

About a dozen producers operate 15 plants to supply the magnesium by using three basic processes, the major one being electrolytic reduction of fused magnesium chloride. Brine, sea water, magnesium salts and magnesite are the raw materials from which this magnesium chloride is produced. Other processes involve direct reduction of magnesium oxide, one using carbon and the other, ferro-silicon as the reducing agent.

The large number of workers in the hundreds of plants working with the metal are viewed by some as the most important factor expected to influence its use for products in the post-war market. This "know how" or knowledge in handling and fabricating magnesium, in addition to the influence on the amount of the metal used, has done much to bring about a better understanding of the metal's inflammability.

Price will also carry considerable weight in post-war magnesium use. In 1915 its cost was $5 a pound. The figure had fallen to 27 cents in 1939 and four years later was 20.5 cents per pound. On a weight for weight basis, magnesium is more expensive than other ordinary commercial metals, having a slight edge when compared on a price per unit of volume.

Airplane manufacturing has always been the greatest single user of magnesium. Before the war a large percentage went into aircraft. The large quantity now being used in the aviation industry is expected to decline, although it is felt that a considerably greater amount will be used per plane because of the saving in weight. The "mystery metal" finds its way into aircraft engines, accessories, fuselages and some designers are understood to believe that it can be substituted for aluminum in wing construction.

Ground transportation is where magnesium is predicted to increase as plane production slows after hostilities cease. Magnesium makers state that utilization of the light metal in many ground vehicle applications improves efficiency and results in economy for the operator in permitting increased payload. In the case of buses and trucks, they point out, the lighter the vehicle, the less power is needed for starts and stops.

The portable equipment field is another where magnesium is expected to shine, as the magnesium industry sees a potential market wherever an article must be lifted or moved about. Large amounts of magnesium may go into the chemical industry, if forecasts are correct, with other consumers including manufacturers of typewriters, pneumatic tools, sewing machines, luggage, furniture and vacuum cleaners, to name a few. (S.A.L.)

New Tools for Visual Inspection of Internal Surfaces

Polan Industries of Huntington, W. Va., a unit of Zenith Optical Co., has developed an entirely new line of precision optical tools for visual inspection of internal surfaces. Manufactured under the name Borescope, the new instruments were designed by a staff of eye doctors, tool engineers, and optical engineers which cooperated with industry in perfecting efficient and eye-saving trouble shooters.

The makers emphasize that Polan Borescopes have been designed as tools for every-day machine shop use, and are instruments of precision and simplicity of operation. Durably constructed of metal, they are made to inspect internal surfaces of any depth by the simple expedient of connecting additional units with bayonet lock joints.

Light source is built into the head of the Borescope, the tubular bulb, shielded from the operator's eye, gives smooth and evenly distributed illumination for the entire field, say the manufacturers. Available in several models and sizes with extensions for inspections at depth, there is also a special right angle model for internal wall inspection of short bores, such as gun chambers, engine and hydraulic cylinders, etc.

North Carolina Ship Firm Makes $25,000 Gift

A $25,000 donation has been made to the North Carolina Engineering Foundation, Inc. and State College by the North Carolina Shipbuilding Co. at Wilmington, it was announced recently by Col. J. W. Harrelson, administrative dean at North Carolina State College.

The foundation, headed by former Governor Broughton as president, recently was chartered to promote engineering education and research at State College, and plans to expand engineering research facilities at the college, to improve teaching facilities, to strengthen the faculty, and to formulate a plan of engineering extension designed to broaden the college's services to industry.

(Continued on page 66)

SAVING THE SOIL

Will Save MAIN STREET

Every American...every farm, ranch, village, town or city...is dependent upon the soil. Soil made poor and unproductive through erosion and loss of plant food means a loss for you... wherever you live, whatever you do.

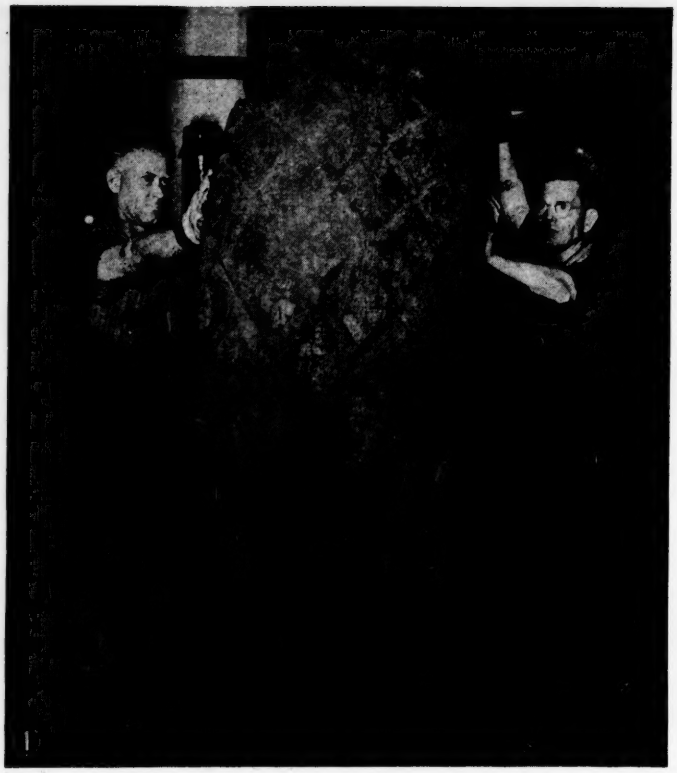
Bankers, merchants, professional men...newspapers and chambers of commerce...certainly, all landowners, farmers and ranchmen...have a vital stake in the proper use and conservation of our land...for *Saving the Soil Is Saving Main Street, and America.*

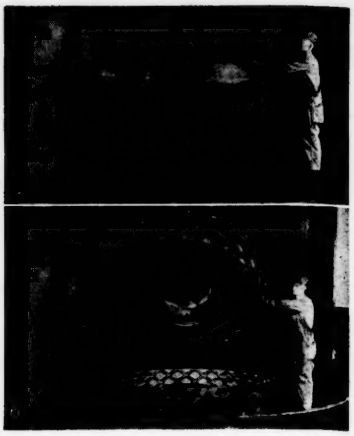
Farms, ranches and communities that have developed well-planned, practical and productive conservation programs have proved that it pays. And, experience proves that balanced farming and conservation crop rotations in the Cotton Belt should be built around COTTON, the surest Cash, Feed, and Food crop.

Educational Service

NATIONAL COTTONSEED PRODUCTS ASSOCIATION, Inc.

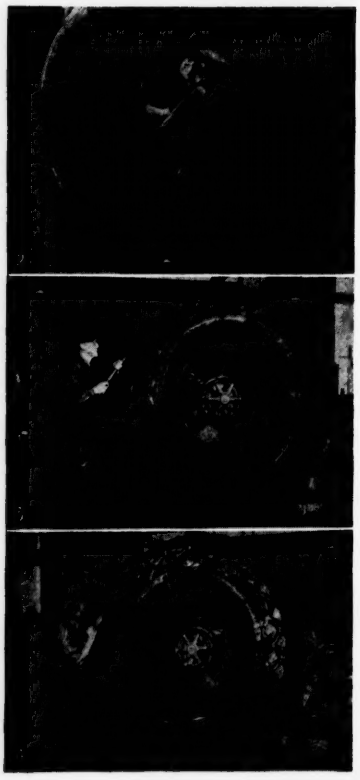
714 Praetorian Building — Dallas, Texas





The largest tire—a 24.00 x 32—to be re-capped with a new tread at the Goodyear plant, Akron, Ohio, was a battle-scarred veteran of construction requiring rubber that would re-cap 60 passenger car tires. The pictures show the process. 1—Tire being rolled to receiving room. 2—Inspection. 3—Tread cuts being cleaned and roughened. 4—Applying and stitching camelback. 5—Tire being lowered into mold for vulcanizing. 6—The refinished tire being lifted from the mold. 7—A close-up of the rejuvenated tire ready for many hard miles of service on military or civilian construction.

Rebirth of a Tire



LAKELAND

welcomes INDUSTRY

THIS progressive community in the heart of inland Florida is interested in attracting various selected industries which are adapted to this locality and to the resources available here. Lakeland is the citrus center of Florida—the home of the Headquarters Offices of Florida Citrus Commission, which represents a $200,000,000 industry. Polk County, in which Lakeland is located, is the greatest citrus producing county in Florida and most of Florida's oranges, grapefruit and other citrus fruits are produced within 75 miles of this city.

Lakeland is in the heart of Florida's great phosphate region where 90% of American phosphate is mined. It is centrally located with respect to Florida's great and fast growing cattle industry, which offers opportunities of various kinds in the years ahead. Lakeland, likewise, is conveniently located in relation to the lumber resources of Florida, which include a great variety of hard and soft woods useful in scores of woodworking industries.

Lakeland offers the best of living conditions for both employer and employee. Its living costs are moderate. Its taxes—State, County, and Municipal—are reasonable, and State laws encourage industry in many ways. Mild year-around climate reduces costs for building and heating. Pleasant living conditions make for greater efficiency and more contentment among employees. These and various other factors combine to make an interesting invitation to industry to locate in this community.

We invite inquiries and offer our fullest cooperation.
Address R. R. Grassfield, Secretary, Chamber of Commerce, Lakeland, Fla.

FLORIDA'S CITRUS CENTER

War Accelerates Gypsum Uses

(*Continued from page* 60)

bling at the top as its water content evaporates. When the desired amount of water is driven off, the material is ready for the next step.

For common plaster to be used on walls, this stage is the tube mill which reduces the mass to a fine powder. After this the material is put into weighing hoppers where a fibrous material and a retarder are added before going to the mixers. Below the mixing bin is a long row of paper bags into which the plaster falls, being automatically bagged and weighed.

In the wallboard plant are moving belts upon which liquid plaster is fed onto a sheet of paper lying on the belt; the paper edges fold up and over the plaster edges; a top sheet of paper slaps down and glues itself to the folded bottom edges, enclosing the plaster in a sandwich. This moves along a belt between guiding, shaping rollers, setting harder as it moves.

Near the end of the belt measured sections are cut off and drop onto a second belt that carries them through a drying kiln.

Production of sheathing, lath and siding is much like that of wallboard.

This modern processing procedure is in sharp contrast to gypsum's introduction to the building field about 6,000 years ago. As early as 4,000 B. C., the Assyrians used gypsum plaster for beauty and fire protection. Egyptian building genius which conceived the Great Pyramids also employed gypsum mortar to bed the blocks and gypsum plaster to cover rough spots of the interior. Today that plaster is still evident after more than forty-five centuries to testify to gypsum's durability.

In another way, the Egyptians foreshadowed gypsum's importance. The body of King Tut was encased in plaster, one of the earliest examples of its employment in casts.

Gypsum appeared in all the ancient civilizations of the Western World. It is mentioned in Greek writing and the Romans were probably the first to use it in art.

The Bible, in the book of Leviticus, tells of a law which required that all houses where leprosy had existed be completely replastered. After a disastrous fire in London in 1212, King John ordered that all shops must be plastered as a fire prevention measure.

Near Paris, late in the eighteenth century, the abundant deposits available led to its use in orthopedic casts, in which gypsum could be used in its simplest form. The result was plaster of Paris, still the most efficient means of encasing broken limbs.

From France, Benjamin Franklin introduced gypsum to America in another role—as fetrilizer. Deposits were discovered in New York state in 1792, and it was sold commercially for the first time in 1808. It was not until seventy years later, in 1878, that it again found widespread use as plaster, and shortly afterward the first gypsum building board was developed.

Use of gypsum in plastering marked one of history's greatest advances in building, and made possible today's rapid construction and mass building. The quick setting of gypsum assured rapid completion, permanence and fire protection. Development of gypsum building boards, available in large panels, stepped up building speed and in the last four or five years helped make speedy construction of wartime building possible.

The growth of the industry since 1878 has been rapid. In 1895 the tonnage produced was 265,000. By 1913 it had reached 2,447,000 and since Pearl Harbor it has been about 4,000,000 tons annually. Yet since it is one of the world's most plentiful substances, gypsum will be available for many more centuries despite this rapid increase.

Buyer's Guide Ready

The 52nd annual edition of *MacRAE'S BLUE BOOK*, published by McRae's Blue Book Co., 18 E. Huron St., Chicago 11, Ill., now off the press, although manufactured under wartime conditions, and in conformity with all government regulations controlling the use of paper and other materials, continues to offer to American industry an accurate and complete buyer's guide.

Although changes in quality of paper, typography and format were necessary to comply with many war time restrictions and regulations, the new book contains more data and information than previous issues. Price $15.00, postpaid by the publishers.

Cates Joins Macon Chamber

Walter T. Cates, formerly executive secretary of the Burlington, N. C., Chamber of Commerce, has accepted a similar position with the Macon, Ga., Chamber, succeeding Lee S. Trimble who recently became a member of the Georgia Agricultural and Industrial Board.

Texas Oil Production

Petroleum production in Texas during 1944 shattered all records, according to a recent statement by Beauford H. Jester, retiring chairman of the Railroad Commission of Texas.

During the twelve-month period ending December 31st, crude oil from the wells of the Lone Star State totaled 739,781,126 barrels, an increase of 51.77 per cent over the 1943 production of 487,436,107 barrels.

Texas furnished 93.6 per cent of the increased production in the United States to meet war's insatiable demands for petroleum and its products.

N. A. M's. Golden Anniversary

The Golden Anniversary of the National Association of Manufacturers was celebrated January 24-25, in Cincinnati, Ohio, site of the Association's founding.

Because of travel restrictions attendance was drastically curtailed, but a special supplement to *NAM News*, weekly organ of the Association, carried highlights of the meeting to membership throughout the nation, while a special broadcast over the Blue Network, "Industry Prepares for a New Future," served to acquaint the public with some of the Association's achievements during its half-century of existence.

Air Line Seeks New Route

G. T. Baker, president of National Airlines, Inc., recently announced that his organization has filed application with the Civil Aeronautics Board, Washington, for an extension of routes from Pensacola, Fla., to Philadelphia, Pa. Mr. Baker stated Montgomery, Ala., Atlanta, Ga., Greenville, S. C., Asheville, N. C., Charlottesville, Va., Washington and Baltimore would be stops on the proposed route.

Coad to Enter Private Business

James E. Coad, for the past three years Industrial War Coordinator for the State of North Carolina, has entered private business under the firm name, Coad and Associates, Inc., with offices in Raleigh, Washington and New York City.

The firm will offer industrial engineering services, act as factory representatives for domestic and foreign trade and represent war industries of North Carolina before Federal agencies in matters of contractual relations and adjustments.

North Carolina Ship Firm Makes $25,000 Gift

(*Continued from page* 62)

Colonel Harrelson disclosed that the foundation and the college have plans for the erection of a general engineering laboratories building at a cost of about $700,000.

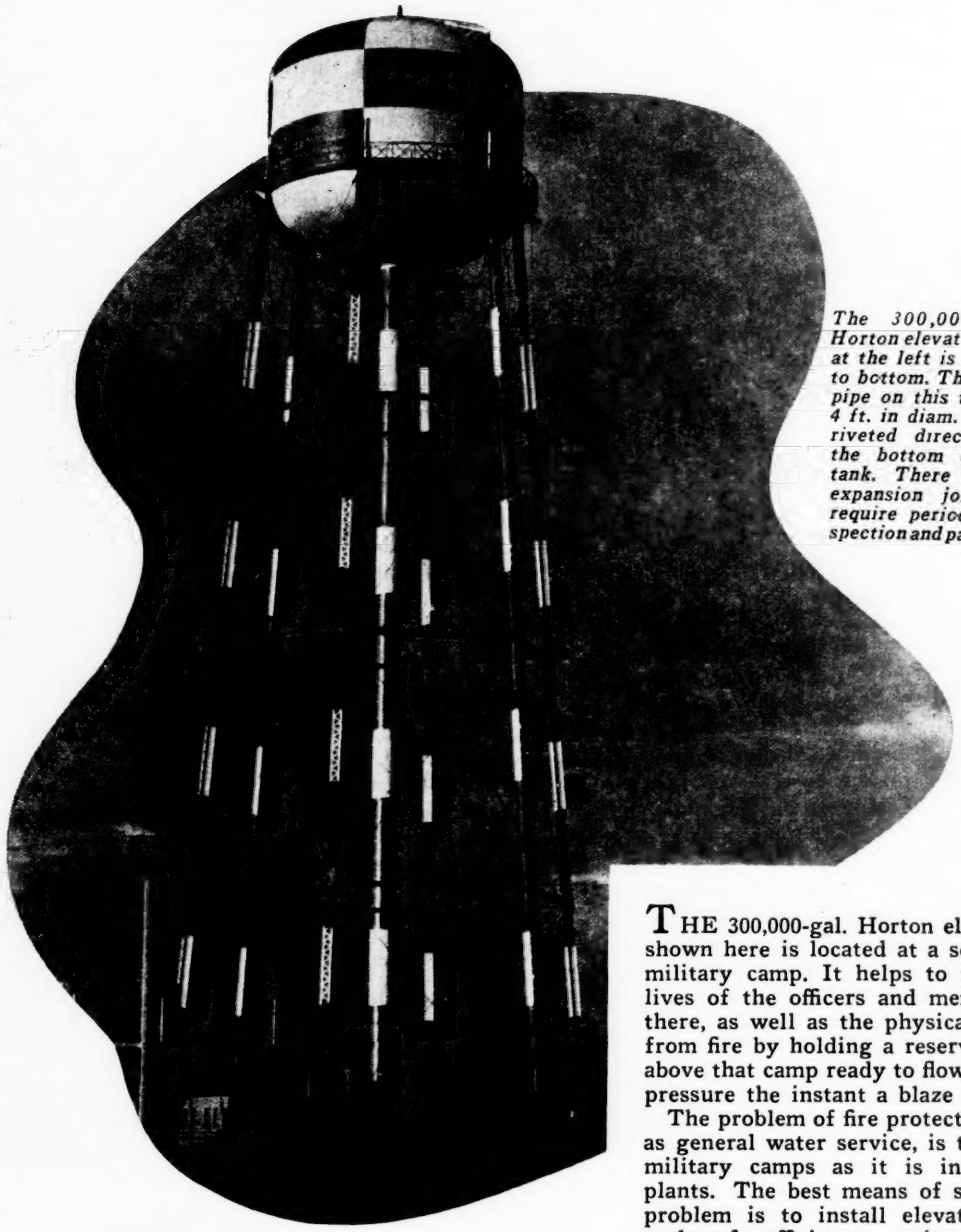
"We anticipate," Colonel Harrelson explained, "that near-future industrial needs will require keener young men who must have some knowledge of the value of research and an understanding of research technique in addition to formal engineering education. Also, many industries will need laboratory assistance from schools of technology."

Foamite for Oil Fires

American-LaFrance-Foamite Corporation, Elmira, N. Y., has issued a new illustrated folder describing the various types of foam applicator again made available by the Government release of aluminum, for some time unprocurable for this purpose due to war conditions.

Flammable liquids in storage present a constant fire hazard. To safeguard these vital fluids from loss by fire, foam application has long been recognized as the best possible answer, and vast quantities of oil in storage are protected by fixed piping systems.

IS YOUR BOY SAFE IN CAMP TONIGHT?



The 300,000-gal. Horton elevated tank at the left is 135 ft. to bottom. The riser pipe on this tank is 4 ft. in diam. and is riveted directly to the bottom of the tank. There is no expansion joint to require periodic inspection and packing.

HORTON Elevated storage tanks provide gravity water pressure for fire protection at military camps.

THE 300,000-gal. Horton elevated tank shown here is located at a southeastern military camp. It helps to protect the lives of the officers and men stationed there, as well as the physical property, from fire by holding a reserve of water above that camp ready to flow by gravity pressure the instant a blaze breaks out.

The problem of fire protection, as well as general water service, is the same at military camps as it is in industrial plants. The best means of solving this problem is to install elevated storage tanks of sufficient capacity to provide the required fire flow to control any fire that may threaten to destroy the property or endanger lives.

We invite new industries and those planning modernization and expansion programs to write our nearest office for complete details and quotations on Horton elevated storage tanks.

CHICAGO BRIDGE & IRON COMPANY

Birmingham 1 .....1530 North Fiftieth Street
Houston 1 .....5614 Clinton Drive
Tulsa 3 .....1611 Hunt Building
New York 6 .....3313—165 Broadway Building
Cleveland 16 .....2216 Guildhall Building

Chicago 4 .....2106 McCormick Building
San Francisco 5 .....1040 Rialto Building
Philadelphia 3 ...1619-1700 Walnut St. Building
Los Angeles 14 .....1417 Wm. Fox Building
Washington 4 .....703 Atlantic Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Good Forestry

(*Continued from page* 48)

they could give work to twice that many. And the average farm woodlot in this mighty forest empire earns about one-eighth of what it could be made to earn.

Contrasts such as that between what the Southern forest empire could produce and what these vast spreading lands are being allowed to produce runs through the whole picture of the forest situation in the South. Only too well do such contrasts indicate how little and how unevenly among the people has knowledge about forests and forestry been made available; how little, after all, the bulk of the people understand the forest problem and its importance to their lives and pocketbooks.

* * * *

You find lots of good forest practice throughout the South, but you find it like as not right next door to forests whose owners apparently don't know much, if anything, about their potentialities or how to cash in on them. You can step from fine, managed forests directly onto clear-cut, burned and denuded forest land in another ownership. You can find plenty of woodlots which for years have been yielding successive crops of timber, poles, piling, pulpwood and other products, giving jobs to workers, paying taxes and showing a profit. But in the same locality you can find more woodlots cut and burned clean, with little or no prospect, sometimes, of producing another crop of trees unless planted...

Back in the eighties, the South's forests were old-growth timber, mostly in large ownerships, supporting big sawmills. Most all of the big timber has been cut, and the big mills have been steadily going out of business for lack of logs. Also, there are today in the South about 18,000,000 acres of forest land so cut and burned over that they will have to be planted if they are again to bear trees. Today's southern forests are mainly young, second growth. They are in thousands of small ownerships, almost three-quarters in ownerships of less than 5,000 acres. Operating in these young forests, cutting so the drain exceeds growth, are some 17,000 small mills. Many of them are wasteful and inefficient, and economic pressure makes it pretty tough for their owners, alone and unaided, to observe good cutting practices and still make a living.

Briefly such facts suggest the picture in Southern forests as we approach a post-war period when, according to informed opinion, the demand for forest products is likely to be even greater than it has been during the war. This period might well be an opportunity for forest land owners and industries beyond anything we've seen in years, for it will mean stable markets, good prices and ample labor. It well might be a priceless opportunity for anyone who wants to put his timber land in continuous production and keep it so. And it ought to be a great opportunity for conservationists — in and out of the public service— to get together behind a program of education for the people of the United States in the field of forestry such as we never have had before.

There are around 2,000,000 farms with woodlots in the South, and many, many woodspeople such as I have mentioned in this story, but I don't believe that up to now 20 per cent of them have been reached with educational material....

The fact is, the popular will to good forestry has not been created as yet in our country. If we are to create such a will now—at the outset of a postwar period which can, if we choose, be a time of great progress for forestry, we shall have to do a bigger, better and more costly job of education. All will not agree with me, perhaps, but I also feel we shall have to adopt some form of State control of cutting practices on private lands. Not as a policeman's club, let me say, but as an effective vehicle for widespread, intensive popular education.

Louisiana Small Business

(*Continued from page* 49)

ting up this group we in no way propose to encroach upon the fields of private engineering practice. But we do want to give the little fellow in business a better chance to compete with big concerns that can easily obtain the kind of help the board can give.

"The economy of Louisiana is intimately associated with the progress of its small businesses, and we feel it imperative that they be given a helping hand. We are going to be looking to our small plants, factories, and stores to give peace-time jobs to many of our 300,000 service men and war workers who will need them. They cannot do this if they have to suspend operations. Our aid to them now will pay dividends to the whole people in the postwar and permanent future."

Southern Rice

(*Continued from page* 53)

More rice for the armed forces is expected to result from completion of a $750,000 plant constructed at Houston, Texas, by the Defense Plant Corporation, for Converted Rice, a concern established around a process which is said to retain in the finished product the nutritional value of unmilled rice. Another advantage, according to its inventors, is its resistance to weevil infestation.

The grain is saturated in the conversion process and because of this, developers of the method state, the weather hazard is removed from rice harvesting. Emphasis in the past has been on cutting the rice at that stage of maturity when it contains from 23 to 28 per cent moisture, to obtain the greatest yield per acre and to lower breakage in milling due to light, chalky kernels.

Both vacuum and pressure are employed in the conversion procedure. The rice is saturated with water containing vitamin B. complex and other whole grain properties found in the hulls, bran layer and germ, says Gordon L. Harwell, a copartner in the Houston enterprise. During the steam and drying period, these properties are heat-sealed in the grain and may remain after the milling, washing and cooking.

Last year, United Stats production of rice was 70,237,000 bushels, a gain of more than five million bushels over the crop of 1943. Almost four-fifths of the total originated in the three southern states of Arkansas, Louisiana and Texas, whose production figures were 14,369,000, 22,160,000 and 19,208,000 bushels respectively. It is entirely possible that some of this rice will follow American troops to feed natives in re-conquered far-eastern areas ravaged by the Japanese.

Experts of the United States Department of Agriculture say that for several years the world rice picture has been so muddled by wartime isolation of the oriental producing areas that it is impossible to foresee what the future holds and that outlook opinions at the present time

(*Continued on page* 70)

AIM YOUR MESSAGE AT THE MEN WHO COUNT . . .

LEADING *Southern* EXECUTIVES

In the period of "change over" following the war, Southern Industry will become an outstanding market for everything in the way of machinery and equipment. Plans are even now going forward, and preparations are being made for the selection of the manufacturer who can make the things needed. Now is the opportune time to get your message to the men who make these plans and place these orders, the leading Southern Executives. What more logical medium could you choose than the magazine which has contributed to the progress of Southern Business for 63 years, the Manufacturers Record?

Yes, the Manufacturers Record specializes in reporting the activities of Southern Industry for the South and for the rest of the nation. Over the years it has developed indispensable reader interest among leading Southern Executives because, more than any other magazine, it deals with the problems and progress of Southern Business.

MANUFACTURERS RECORD

Established 1882

The Business Magazine of the South

CANDLER BUILDING
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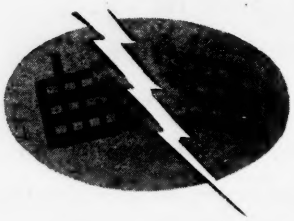
Publishers:
Manufacturers Record—Blue Book of Southern Progress
Construction Magazine — Construction Daily Bulletin

TAX LIGHTNING



THE impact of estate taxes on the owners of private companies is often so great that it may well be described as "Tax Lightning." The best financial "lightning rod" that can be built to ward off this misfortune consists of ample liquid capital and an established market for equities in the enterprise.

In recent years the owners of many a family-owned company or closely held corporation have found that by distributing *part* of their holdings to the investing public, they have made the whole enterprise stronger, more flexible, more *stable* for the future.

Those who control well-established companies and who may be considering partial sale of ownership are invited to consult with one of our partners. As investment bankers with broad experience, we are in continuous contact with markets and conditions, and will be pleased to discuss particulars such as recapitalization, correct pricing and the pattern and timing of distribution.

Since January 1944 this firm has raised new capital through public offerings for the following corporations:

ATLAS PLYWOOD CORPORATION
Noted maker of plywood packing cases.

DIANA STORES CORPORATION
A chain of 26 women's apparel stores in the South Atlantic States.

NATIONAL CONTAINER CORPORATION
A leading maker of kraft pulp, kraft paperboard, corrugated and solid fibre shipping containers.

THE DRACKETT COMPANY
Manufacturer of chemicals, including the household cleaning products "Drano" and "Windex"; also soybean oil and oil meal.

BUFFALO BOLT COMPANY
89 year old manufacturer of nuts, bolts and rivets.

ALLEN B. DuMONT LABORATORIES, INC.
Prominent in the field of television, manufacturer of electronic devices and radar equipment.

SOLAR MANUFACTURING CORPORATION
Maker of electrical appliances for industrial, radio and household fields.

FRANKLIN STORES CORPORATION
A chain of 52 women's apparel stores in Texas, Louisiana, Mississippi, Oklahoma, Arkansas and Minnesota.

AMERICAN PHENOLIC CORPORATION
Manufacturers of precision parts for the electronic and aircraft industries; also plastics for electrical and industrial uses. Trade name "Amphenol."

VAN ALSTYNE, NOEL & CO.
Members
New York Stock Exchange *New York Curb Exchange*
52 Wall Street, New York (5)

Southern Rice

(*Continued from page* 68)

would fall into the category of pure speculation.

It is evident, however, that the increase in the United States rice acreage to maximum wartime capacity has been made in order to fill some part of the deficit created by absence of eastern rices. The emergency may be expected to continue until shipment of the eastern rice is resumed.

During the last two decades, they observe, some United States rices of high quality have been sold to selected markets each year. The trade hopes to continue to supply customers who want this type of merchandise. The bulk of peacetime production is consumed domestically.

Rice, in fact, originated in these oriental areas, probably somewhere between southern India and Cochin-China. Agricultural authorities say its cultivation apparently spread from this region northeastward to China, several thousand years before the Christian era. Westward, rice cultivation spread to Iran, Arabia, Egypt and then to Europe.

South Carolina was the first state in this country to grow rice brought to this continent in about 1685, possible from Madagascar. Acreages devoted to the cereal grain spread into North Carolina and Georgia. Just before the War between the States, these three states produced most of the country's output.

Rice was introduced in Louisiana about 1718, but it was not until 1887 that it was found the grain could be raised profitably in the coastal priaries in the southwestern part of the state. Two years later, Louisiana became the leading rice producing state, a position still retained. Rice cultivation in Texas was started as early at 1863, but it was not until 1899 that it became commercially important. Within the following three years, rice cultivation was started in Arkansas, now the third of the four producing states in this country.

S.A.L.

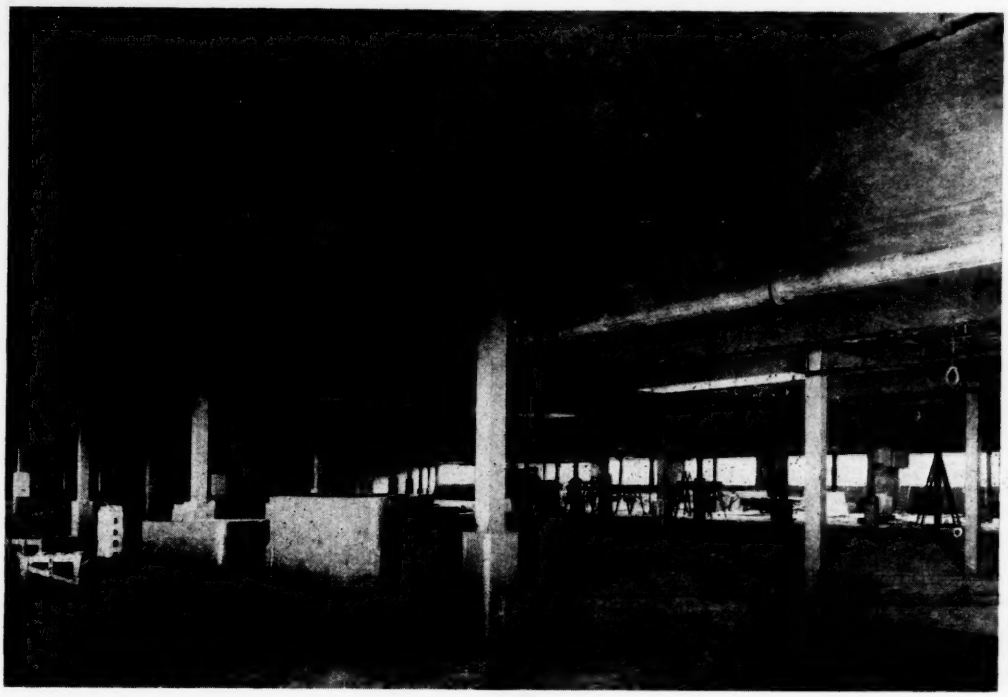
Taxes In the South

(*Continued from page* 57)

climate; a large, native-born, intelligent labor supply; adequate sources of raw materials; abundant hydro-electric power, and efficient transportation systems, are all in the South.

Material advantages that are aids to the South's industrial growth surpass those of any other section, but many of the southern states have tax laws and regulations of manufacturing concerns that offset the material assets.

The South stands on the very threshold of an industrial era that has been the ambition of her public spirited citizens since the eighteen sixties. Now is the time for the respective southern states to survey their tax structures and industrial regulations, eliminate those measures that raise little revenue, frighten industry away and send it to those states far-sighted enough to realize that jobs and pay rolls ultimately produce more tax revenue than high imposts on industry.



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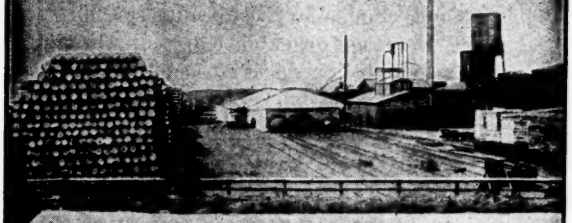

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For making pipe by hand methods by either the wet or semi-dry processes. Built to give more years of service—sizes for any diameter pipe from 12 to 84 inches—tongue and groove or bell end pipe—any length.

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The great Anatole France once said: "The domestic hearth—there only is real happiness." The domestic hearth may hold a different meaning for each of us. Whether it represents a large house... a small bungalow... an apartment—it signifies *home* and all the things that have gone into it. *Today's action to protect it is tomorrow's guarantee of its safety!*

How best to safeguard it? What specific protection does it need? How do changing conditions affect its value? How can it be done most economically?

These and other questions can be answered by your insurance agent—a friend, ready at all times to give help and counsel. Thoroughly experienced and possessing a knowledge of local conditions, his understanding of your requirements is intelligent and sound. Why not consult a specialist as you do at other times when your own knowledge is limited? You pay no more, and a specialist's services now and later may prove invaluable.

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NEW YORK, N. Y.

BE IN THE KNOW • LISTEN TO LELAND STOWE • BLUE NETWORK • SUNDAY EVENINGS

Southern Industrial Expansions

(*Continued from page* 58)

Orleans, Texas & Mexico, both subsidiaries of the Missouri Pacific; work contemplated during 1945 includes extension of annual programs for betterment of track, station, shop and yard facilities; largest item in the budget approved is the laying of about 280 miles of new rail and some 160 miles of relaid rail on secondary lines involving expenditure of approximately $4,969,560 for both labor and material.

ST. LOUIS — plant — War Production Board approved plans for construction of plant for annual production of 72,000 tons of sulphuric acid for explosives by National Lead Co.

ST. LOUIS — H. F. Tacke Building and Construction Co., incorporated by H. F. Tacke and others, for general contracting business.

ST. LOUIS — warehouse — United States Steel Supply Co., subsidiary of United States Steel Corp., acquired site for erection of warehouse.

SPRINGFIELD — construction — Chalender Construction Co., capital $30,000, incorporated by John W. Chalender, Jr.; building construction.

NORTH CAROLINA

CARRBORO — building—Pacific Mills of Boston, Mass., acquired Durham Hosiery Mill building at Carrboro for purpose of establishing a worsted and woolen weaving plant; Pacific Mills, according to their engineering representative in the South, J. E. Sirrine and Co., of Greenville, S. C., plan, as soon as approval is obtained from the necessary federal agencies, to establish a 54-loom worsted weaving unit.

CHARLOTTE — Charlotte Broadcasting Co., Hugh Cathey, treasurer, applied to Federal Communications Commission for permission to operate 1,000-watt station.

CHARLOTTE — engineering — F. E. Robinson Co., capital $100,000, incorporated by F. E. Robinson, electrical engineering.

CHARLOTTE — expansion — Southern Bell Telephone & Telegraph Co. has acquired lease on building 118 S. Church St.; will move business office from building, 208 N. Caldwell St., to new location.

CHARLOTTE — plant — King Chemical Co., capital $100,000; chartered by F. J. King of Atlanta, Ga., and J. L. Pressman, of Charlotte; manufacture various forms and qualities of soap; equipment now being assembled.

CHARLOTTE — radio station — Wayne Nelson of Concord, applied to Federal Communications Commission for authority to build and operate a 250-watt station.

CHARLOTTE — textiles—Edminston-Rimmer, Inc., capital $100,000; incorporated by Ralph S. Rimmer.

DURHAM — plant—Mecklenburg Construction Co. will construct freezer locker plant; construction will start as soon as priorities are properly met.

FOREST CITY — plant — E. L. Walter, secretary of Forest City Mutual Electric Refrigeration Association, Inc., plans installing frozen food locker plant.

GREENSBORO — foundry—Guilford Foundry Co., chartered by H. D. Wilson.

HUNTERSVILLE — plant — W. F. McLaughlin signed contract with Frozen Food Locker Construction Co., Atlanta, Ga., for frozen food locker plant.

PITTSBORO—expansion—REA granted to Central Electric Membership Corp., a loan of $150,000 to construct electric lines in Lee, Moore, Chatham, Bloke and Wake counties.

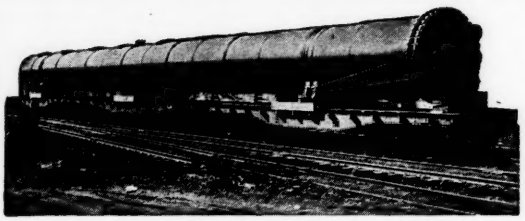
STATESVILLE — contracting — Sterns Brothers, Inc., capital $100,000, chartered by C. A. Stern, contracting.

OKLAHOMA

Improvements—Warren S. Miller, general manager for the Southwestern Bell Telephone Co. in Oklahoma, announced company plans spending in Oklahoma $22,500,000 for postwar improvements.

(*Continued on page* 74)

Tank Builders For Over 80 Years!



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Our Engineering Department will submit designs or any equipment may be made from your own specifications.

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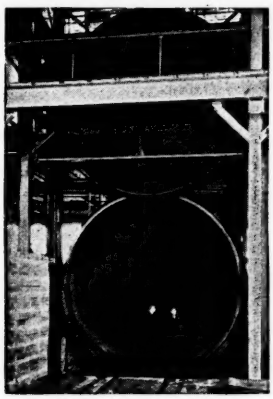

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Southern Industrial Expansions

(*Continued from page 72*)

ALFALFA — extensions — Alfalfa Electric Cooperative, Inc., Cherokee, has REA loan of $50,000 for extensions.

HOLDENVILLE — mining—Indian Lime and Crushed Stone Co., capital $25,000, incorporated by Paul Taylor.

HUGA — electric lines—Choctaw Electric Cooperative, has $100,000 allotment from Rural Electrification Administration for extension to rural electric lines.

MUSKOGEE — gas — American Gas & Oil Co., incorporated by William Killey.

SOUTH CAROLINA

CHARLESTON — port — City, E. Edward Wheman, Jr., Mayor, presented a preview of preliminary phases of a survey conducted by Lockwood, Greene & Co., Engineers, on port facilities; recommended construction of new port facilities at cost of $14,000,000.

DARLINGTON — plant — B. B. Coggeshall establishing freezer locker plant.

EDGEFIELD — freezer locker plant — C. G. Shockley Construction Co., Columbia, has contract at $38,995 for freezer locker plant for REA.

GRANITEVILLE — mill — Daniel Construction Co., Greenville, has contract for addition to mill for Graniteville Mills.

GREENVILLE — plant — Dixie Shirt Co., Camp Wadsworth, Spartanburg, completing plans for establishing branch plant in Greenville.

SENECA — mill — Utica & Mohawk Cotton Mills, Inc., Utica, New York, acquired Seneca Mill and village consisting of 300 dwellings and the mill.

WILLIAMSBURG — extensions — Santee Electric Cooperative, Inc., Kingstree, has REA loan of $55,000 for 23 miles of line to serve 370 members.

TENNESSEE

CHATTANOOGA — plant — Mascot Stove Co. plans erecting, post war, a $100,000 plant.

FOUNTAIN CITY — plant — Fountain City Water Co., M. L. Brickey, Pres., plans $100,000 water filtration plant on Beaver Creek.

MEMPHIS — cold storage — Memphis Cold Storage Co. plans early construction of cold storage warehouse at cost of $1,000,000.

NASHVILLE — plant—Defense Plant Corp. authorized Goodyear Tire & Rubber Co., Akron, Ohio, to construct a $10,000,000 tire plant.

NASHVILLE — plant addition — Allan Murphy has contract at approximately $50,000 for construction of stock pen and tunnel under street, for Neuhoff Packing Co.

TEXAS

Gas line—Lone Star Gas Co., Dallas, completed purchase of right of way for a projected ninety mile long gas pipe line from Carthage Trinity gas and distilling pool in Panola County; priority obtained for pipe.

AUSTIN—addition to plant—The Steck Co., plans construction of seven-story building addition to printing plant.

BAY CITY — rice drying plant—Bay City Rice Drying Company, Bay City, plan construction of rice drying plant.

BEAUMONT — expansion — Warren Refrigerator Co., purchase 2 lots back of its building for post war expansion.

BROWNSVILLE — plant — E. A. Noser Construction Co., McAllen, has contract for construction of quick freezing plant. Pan American Freezers, Eagle Pass, owners.

DALLAS — plant addition — James F. Chambers, Dallas, has contract for construction of addition to plant, to cost approximately $25,000; Borden Co., owners.

EL DORADO — line — Taylor Construction Co., Taylor, low bidder at $136,846 for construction of 202 miles of rural lines in Schleischer County for Southwest Texas Electric Cooperative, Inc.

DICKENS—electrical lines — Eugene Ashe Electric Co., Fort Worth, has contract at $57,629 for construction of 75 miles rural electric lines; Dickens County Electric Cooperative, Spur, owner.

GILMER—electric lines—Electric Contracting Co. has contract at $14,979 for construction of 50 miles Rural Electric lines; Upshur Rural Electric Cooperative Corp., Gilmer, owners.

GOLDWAITHE — frozen food locker plant plant—M. Horton has contract at $33,000 for frozen food locker plant for Mills County Locker Corp.

GONZALES—electric lines—Guadalupe Valley Cooperative; cost, plans approximately 60 miles of rural electrification lines, to soon call for bids.

HOUSTON — machine shop — Marxen & Son has contract for machine shop for F. H. Maloney Co.; cost $10,000.

HOUSTON — plant facilities — Defense Plant Corp., authorized contract with Brown & Root, Inc., to provide plant facilities at cost of $925,000.

HOUSTON — structures — Brown Shipbuilding Co., made application to U. S. Engineer office, Galveston, for permit for structures and work in Houston Ship Channel; work to take place at mouth of Greens Bayou about 3 miles east of Pasadena; includes dredging of an area, construction of about 1,350 feet of steel sheet pile bulkhead and construction of 2 timber piers.

HOUSTON—tire plant — Kelly-Springfield Tire Co., Cumberland, Md., proposed $6,000,000 tire manufacturing plant to be located on Goodyear Rubber Co.'s synthetic rubber plant site, near Pasadena; work to begin immediately.

JUNCTION —electric lines — Taylor Construction Co., Taylor, has contract at $88,085 for approximately 150 miles of rural electrification lines in Kimble County.

(*Continued on page 76*)

Look at the map of Florida and note Orlando's location in the geographical center of the State. This, plus the fact that it is at the cross-roads of highways and skyways, makes it an ideal location for distributors and jobbers. Best of living conditions, moderate living costs. Cooperative city and county government. Investigate Orlando's many advantages. Write Greater Orlando Chamber of Commerce, 152 Chamber of Commerce Building, Orlando, Florida. Ask for book "Pertinent Facts about Orlando."

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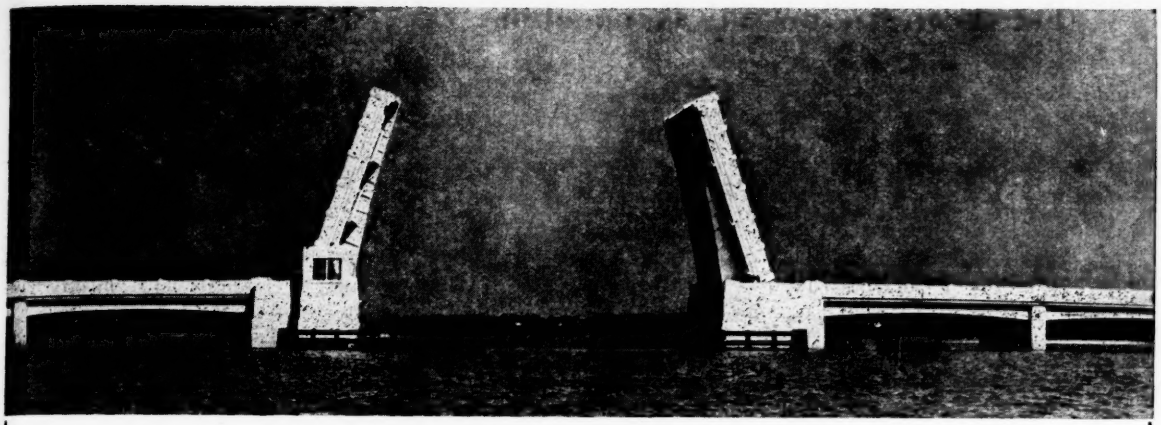

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Southern Industrial Expansions

(*Continued from page* 74)

JUNCTION — plant — E. R. Borden, erect frozen locker and processing plant; owner builds.

KANSAS CITY — electric lines — Karnes Electric Cooperative, plans approximately 120 miles of additional lines.

MERCEDES — packing plant — Edward H. Noser Construction Co., McAllen, has contract for packing plant; C. E. Watson, Mercedes, owner.

MERCEDES — packing plant — G. E. Watson starting work on erection of $75,000 tomato packing plant.

MISSION — packing plant — M. Hutchinson will construct packing plant near Mission.

MONTE ALTO — packing plant—Mid-Valley Cooperative Canning Co., Edcouch, plans construction of packing plant.

PHARR — packing plant — Texas Products Co., has plans in progress for packing plant; cost $150,000.

PORT ARTHUR — plant — Jefferson Chemical Co., a subsidiary of American Cyanimid Corp., New York City, and the Texas Co., will operate a $20,000,000 plant for converting waste oil into chemicals.

SAN ANTONIO — electric — San Antonio Public Service Board has W. P. B. priorities for construction of electric power distributing stations in packing house district and near Culebra road and W. 24th St.; cost of two will be approximately $158,000; priority also granted for conductor underground cable, cost $20,000.

SAN ANTONIO — plant — Carpenter Paper Co., plans office and plant building.

SAN AUGUSTINE — electric — Universal Electric Construction Co., Houston, has contract for constructing 5 miles rural electric lines; Deep East Texas Electric Cooperative, owners.

SINTON — rural line — San Patricio Electric Cooperative, has $75,000 allotted by REA for construction to rural line.

SUNRAY — plant — Defense Plant Corp., executed contract with Continental Carbon Co., New York, to provide plant facilities at cost of approximately $1,200,000.

TRENTON—locker plant—L. F. Southerland & Lawton Wilson have contract at $32,300 for constructing refrigerating plant; Trenton Refrigerating Cooperative, Trenton, owners.

WACO — expansion — General Tire & Rubber Co., authorized by WPB to make expansion at plant; double present capacity; work to begin as soon as plans have been drawn and materials obtained; expend $1,500,000.

WHARTON — electric lines, etc. — Wharton County Electric Cooperative, has REA funds in amount of $75,000 for constructing rural electric line extensions and remodeling office building.

VIRGINIA

ORANGE — plant facilities—Defense Plant Corp., closed contract with Snead & Co., for plant facilities at cost of $500,000.

ROANOKE — radio station — Virginia Broadcasting Station, William G. Barnes, of Martinsville, secretary-treasurer, granted charter with capital of $82,500 for constructing radio station.

WINCHESTER — plant — Defense Plant Corp. increased contract with O'Sullivan Rubber Co., Inc., to provide additional equipment at a plant in Winchester at cost of $65,000 resulting in an overall commitment of approximately $340,000.

WEST VIRGINIA

BECKLEY — publishing — Biggs-Johnson-Withrow, Inc., capital $50,000, incorporated by Leonard L. Withrow.

WARWOOD — plant — Wheeling Stamping Co., Wheeling, acquired Warwood plant of Continental Can Co., for future expansion.

"Noah's Arks"

(*Continued from page* 46)

most repair ships work three shifts. The APLs shelter two of the shifts while the third is working aboard the repair ship, perhaps on emergency or more lasting repairs to craft operating under, on or above the sea.

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(*Continued on page* 78)

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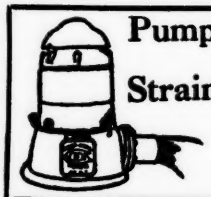

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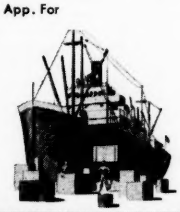

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"Noah's Arks"

(*Continued from page 76*)

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South's Economic Opportunities

(*Continued from page 45*)

together who can study its deficiencies in a broad way, and develop practical programs for solution which may be implemented in a democratic way through the enterprise of every community, and industry.

Business leadership must accept the responsibility for finding ways and means to sell and assist the farmer toward a sounder and more profitable agriculture. They will have to lend their experience, prestige and influence in the implementation of more economical resource utilization, health, education, and factors of that kind.

More complete knowledge through research must be developed of the resources of the region, economical and sound location for industries, industrial processes and product possibilities — trade and market processes must be reexamined, and new opportunities for the products of the region explored—all of which must be made effective through one of the finest educational and promotional programs ever undertaken.

For southern and national leadership which visualizes the security of enterprise in terms of markets sufficient to employ our millions of returning service men and demobilized war workers, thought should be given to the fact that in this region, if the levels of production in industry, agriculture and other fields of enterprise throughout the region were developed sufficiently to provide an increase in the annual purchasing power on its population in the amount of only $100 per capita, the total net increment would be more than $2,800 million per year—a market equivalent to almost the entire volume of the nation's foreign exports in 1939.

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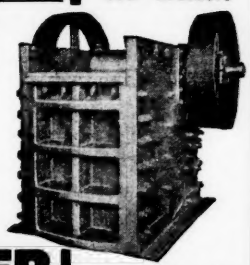

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South's Opportunities

(*Continued from page* 45)

the application today of the qualities of enterprise which made America.

Those who would doubt whether enterprises of the South, and of the Nation, can meet the problems of the next decade would do well to study again the epic of enterprise.

One hundred and forty years ago Thomas Jefferson arranged the purchase for the United States of a piece of land extending from the Mississippi River almost to the Pacific Ocean. President Jefferson, at that time, prophesied that it would take one thousand years for population to settle that broad area. But soon after that, some one invented the steam locomotive — and then some American enterprisers caught a vision—a vision so preposterous to many that they were ridiculed throughout the land. But these enterprisers had confidence in their judgment, and in their power of accomplishment—and they were not to be stopped.

They laid two strips of steel clear across the continent to the Pacific Ocean—thus completing the first transcontinental railway. Then they laid another—and another—and another. These men were building the greatest empire in the world. Within the span of a few short years, American enterprise, starting with broad stretches of wilderness and barren wastes of land, roamed by savages and wild beasts, had built an empire which far surpassed anything which the mind of man had conceived of as a thousand-year job.

Too many have said that American development has about reached its peak — that its economy has about had its growth—that we must accept a static economy, which means the end of expansion and opportunity for enterprise. Enterprise cannot accept such a defeatest philosophy. Enterprise of the 1940s, by applying the same qualities of imagination, foresight, leadership and drive for achievement, can overcome the problems and obstacles of the present day just as effectively as enterprise of last century overcame the problems of that day. But it is going to take planning, organization and execution in terms of the problems at hand.

History tells us that after he had subjugated all of the nations of which he knew, Alexander The Great wept because there were no more worlds to conquer. But the American enterpriser has been conquering new worlds ever since he first set foot on this continent. He has built the greatest empire on earth—from whatever point you wish to view it —agriculture, industry, commerce, or what have you. He has made the products of American enterprise household words in every nation and language on earth.

Through the application of these qualities, under strong and effective business organization and leadership, the South holds all of the essential elements of a modern empire for business and industry, and prosperity for its people. The full mobilization of its resources can hold the answer for profitable expansion of capital investment, new markets for business, balance for the economy, and added security for enterprise and the "American way of life."

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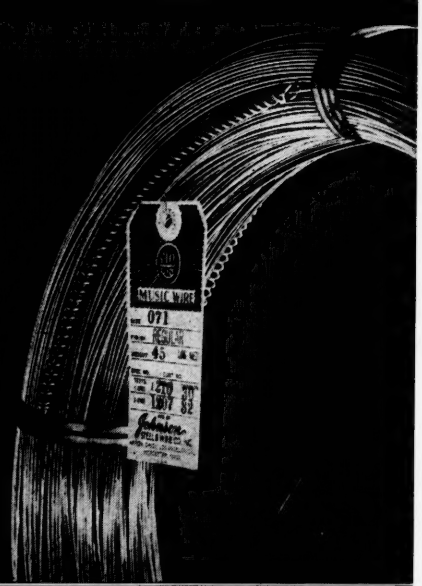

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"Magic" of Science

(*Continued from page* 29)

homes, says Dr. Egloff, with the emphasis on prefabricated, low-cost houses which will be air-conditioned and insulated from heat, cold and noise. Materials used will include plywoods, woods resinified for greater durability, plastics resistant to water, chemicals, oils, gasoline and acids and newly developed steels and light alloys. Enduring paints with hard surfaces in which dirt particles do not become embedded are ready for post-war use. The petroleum industry is now making oils which dry more quickly than linseed oil. A new type of rubber insulation has been developed with a weight of 1.5 pounds per cubic foot compared with the 12 pounds of cork.

Light sources will be built into walls, ceilings and furniture to produce soft and luminous radiant effects which reduce eye strain. The color of the light may be changed automatically according to the time of day or the season, or regulated according to the mood of the individual. Plans are under way, says Dr. Egloff, for walls which will store up light during the day and radiate it at night.

Completely insulated and polished reflecting walls will prevent losses of heat from a room so that smaller heaters will supply enough heat for persons in the room. Thus people will be comfortably warm in a room at much lower temperatures than usually maintained under normal conditions. Heating may be accomplished by high frequency electro-magnetic methods; cooking, by use of infrared rays. It is possible to broil a steak

in three seconds, bake a cake in two seconds and boil eggs in less time than it takes to tell about it. Preparation of a whole meal may require only ten seconds.

Dust particles and pollens will be precipitated and collected by magnetic devices, thus reducing sweeping and dusting to a minimum and furnishing relief to allergic individuals. Tubes will be placed in refrigerators for the destruction of harmful bacteria. Magnesium-aluminum alloys will make available light weight tools and equipment such as ladders, lawn mowers and ironing boards.

Synthetic Textiles

Developments in synthetic textiles, says the Chicago scientist, rival the products of the silkworm, the sheep and the cotton plant. Textiles are now being woven from rayon, nylon, rubber, spun glass, wools from wood and sybeans, fibres from milk, casein, and metals. Many base materials needed in the manufacture of textile fibres come from petroleum, such as formaldehyde from oxidation of natural gas, and acetic acid from the oxidation of hydro-carbons, and from acetylene.

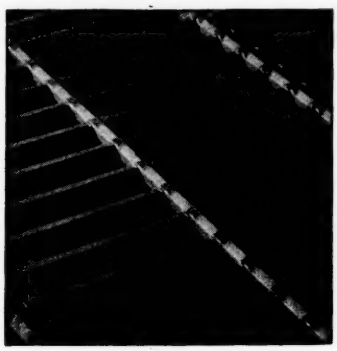
Extremely strong light yarns are being made from synthetic plastics, and fibres having high resistance to fire and chemicals.

The textile industry promises trousers that won't shine or lose their crease, suits that won't wrinkle even when wet and wools that will not shrink and will wear three times as long as present types. In the making of shoes, better selection of leather, better tanning reagents and the use of liquid plastics to protect them during manufacture will insure more comfortable and longer wearing footwear. Many shoes are being made that contain no leather. The army impregnates its shoes with petroleum oil and wax to render them waterproof.

Television, Radar

Communications and transportation will come in for their share of marvels expected in the post-war world. Television will be available for the home, motor car, trains, planes and ships. The "walkie-

(*Continued on page 82*).



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"Magic" of Science

(*Continued on page* 81)

talkie" may be used for individual communication. Radar has distinct post-war possibilities. The use of more efficent engines, fuels and lubricants will make the rate of pre-war transportation seem like a snail's pace.

Some manufacturers indicate that their post-war automobiles will be new and not just the 1942 model. They will be of lighter construction because of use of magnesium-aluminum and high strength steel alloys, plywoods and plastics, as well as lighter weight durable textiles and rubber foam cushioning. Surface finishes will be resins and will be longer lasting and require less washing. Other manufacturers plan to build air conditioning units for their cars.

The engine in the post-war world will have lower fuel consumption per mile and the car will show greater overall efficiency and safety at increased speeds. Fifty or more miles per gallon will be possible by using engines designed for high octane gasoline. Post-war tires may be punctureproof and with improvements in synthetic rubber may outlast the automobile.

Larger Airplanes

Planes may well become a sharp competitor of automobiles, buses, trains and ships. Maximum size of planes is far from being reached. One company has already ordered super-planes that will carry 108 passengers and a crew of 13. To be twice as large as the clippers now plying transoceanic routes, these big planes will make the flight from New York to Rio de Janeiro in 19 hours at fares as low as 3.5 cents a mile. Jet propulsion is a possibility in new methods of peacetime transportation.

Railroads are expected to make a strong bid for their share of post-war traffic. Their trains must provide greater speed and comfort with less noise, less vibration and smoother riding. Installations of diesel engines are now about 10 per cent; experiments with turbines and turbo-electric drives are in progress. More and more trains are being streamlined and greater speeds are sought, with many lines averaging 75 miles per hour and traveling 150 miles per hour on straight stretches, says Dr. Egloff.

The war-born synthetic rubber industry in the United States has made the country substantially free of dependence of natural rubber. The 1,000,000-ton yearly production is about 60 per cent greater than pre-war natural rubber requirements. One company has produced 12,000 types of synthetic rubber, 200 of which have post-war uses. Synthetic rubber is here to stay and we have only started developing types for new uses. It will compete with natural rubber in quality and on a price basis.

Plastics are evident everywhere—from the kitchen to the bombing plane. There is no end to their future potentialities. They constitute fibres for textile weaving, protective coverings and construction materials. They are used as safety glass, as jewels and ornaments, in combs, purses, cars, airplanes, ships and radios. In some cases they combine the best properties of glass with high resistance to and electrical insulation.

Certain plastic rods have the property of bending light rays so that by their breakage. They are used for both heat use one can literally see around a corner. It has been proposed that light from a central source be piped through plastic tubes the same as water or gas. Plastics are being used in natural gas and oil wells, the very industry which furnishes the raw materials for their manufacture.

Glass has been known for thousands of years, but its advances have been more numerous in the last few years than the preceding thousands, a striking example of the results of research. Hard glasses with low heat expansion are used for cooking utensils. Glass fibre board insulates warplanes to save aluminum. Glass is used as a flameproof wire coating and for life preservers. Spun glass is finding its place in surgical sutures. Glass fibres coated with synthetic rubber or resins can be woven into flexible, wear-resistant fabrics. Recently, petroleum lubricated glass hawsers have been used to tie up ships, according to Dr. Egloff. Some of the newer optical glasses are made from the rare earth elements such as tantalum, tungsten and lanthanum. (S.A.L.)

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